

# **Load Balance Broadband Router User's Manual**

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**V662**

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## **CHAPTER 1. INTRODUCTIONS**

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### **1.1 About Load Balance Router**

Load Balance Router also called Multi-Homing SOHO Gateway or Multi-Homing Ethernet Router and so forth. It provides 2/4 10/100 Mbps Ethernet ports (WAN port) and one 10/100 Mbps Ethernet port (LAN port). WAN port is using to connect to broadband transmission equipments such as ADSL modem or CABLE modem for user and far end to download or upload data in high speed. Broadband Router provides one LAN port to connect to computer via cable. You can also connect LAN port with HUB/SWITCH device to extend the amount of connection device/user if necessary. Families with multiple PCs could share one ISP account and play exciting games against each other through Broadband Router. The switch function could also reduce the traffic in internal LAN.

#### **Important Feature:**

- Allows multi-user to use with single user account at the same time
- Web configuration tool
- Multiple DMZ Host (PPPoE, FIX IP)
- Multiple Virtual Server
- Multiple NAT function
- Protocol Route Control (IP Binding Function, by IP & port number)
- Protocol Bandwidth Control (by application protocol port number)
- IP/URL Blocking
- User Bandwidth Control Function ( by user IP address)
- H.323 VoIP ALG included
- Remote Configuration Through Internet
- System Log
- Mail Alert
- Firewall
- Backup / Restore Router configuration file from PC
- Display real time router configuration parameter
- Out-Bound Firmware (for Out-Bound Router)
- In/Out-Bound Firmware (for In-Bound Router)

### **1.2 Interface**

- 2 \* 10/100Mbps WAN ports, RJ45, auto sensing (2 WAN Router)
- 4 \* 10/100Mbps WAN ports, RJ45, auto sensing (4 WAN Router)
- 1 \* 10/100Mbps LAN port, RJ45, auto sensing
- DC input 5V/2.8A
- Default Switch (load factory default)
- FG (Frame Ground)

### **1.3 Package**

- 1 \* Broadband Router (2 WAN or 4 WAN)
- 1 \* CD-ROM containing Broadband Router user's manual
- 1 \* AC Adapter suitable for your electric service
- 1 \* Network cable with RJ-45 connectors for LAN connection

When you open your package, make sure all of the above items are

included and not damaged. If you see that any components are damaged, please notify your dealer immediately.

## 1-4 Quick Understanding Router (FAQ)

### ◆ General FAQ

- Q1: How many WAN ports can I use with Load-Balance Router?
- Q2: What types of Internet Connection do you support?
- Q3: How do I configure my Router?
- Q4: How many Internet connections do you support?
- Q5: Do I require cooperation with my ISP?

### ◆ Configure FAQ

- Q1: Can I change Router administrator user name & password?
- Q2: If push Reset SW, is that function only restore back factory default value?
- Q3: How can I know Router system status & each interface activity if I want to know whether the configuration is correct or not?
- Q4: How to choose working mode when I start to configure router?
- Q5: Can DMZ host function support PPPoE & FIX IP mode?
- Q6: What is configuration file back up & Restore meaning?
- Q7: How to check real time configuration parameter?

### ◆ User Management FAQ

- Q1: Can I specific dedicate packet (by port number) through dedicate WAN port?
- Q2: Can I specific dedicate packet (by application /protocol) through dedicate WAN port?
- Q3: Can I specific dedicate packet (by IP address) through dedicate WAN port?
- Q4: Can I assign fix IP address to dedicated PC when using HDCP?

### ◆ Bandwidth Management FAQ

- Q1: How to limit FTP or other application bandwidth usage?
- Q2: Can I control bandwidth usage for each computer in my network?

### ◆ Router Management FAQ

- Q1: Can I check router status from Internet?
- Q2: What kind of data I can see from “Data Monitor” function?
- Q3: How is link failure detected?
- Q4: How do I know when ADSL link has failed?

◆ **Internet Access FAQ**

Q1: What if I have different speed at Internet connection?

Q2: How to choose “Load Balancing “ working mode?

Q3: Can I connect Router WAN port to another device (Switch, router)

Q4: What happen, if I get multiple IP address from ISP?

Q5: Some Web site with SSL feature (Banking, Game Server) not allow  
access with multiple IP, how to solve this issue?

Q6: Does Router support VPN pass through function?

Q7: Does Router support VOIP pass through function

Q8: Can I limit packet go to dedicated WAN port just by protocol port number?

Q9: Can I limit packet go to dedicated WAN port just by IP address?

Q10: Sometime virus attack network by using “PING” command from Internet  
Can I set up router to reject “PING” command from Internet?



◆ **General FAQ**

**Q1: How many WAN ports can I use with Router?**

We provide 2 WAN & 4 WAN, 2 kinds Load Balance Router.

**Q2: What types of Internet Connection do you support?**

You can connect WAN port to ADSL modem or CABLE modem.

**Q3: How do I configure my Router?**

Use Web Browser to configure router, follow the procedure in the manual

**Q4: Do I require cooperation with my ISP?**

Only need to know the Username & password from the ISP and what kind Of IP address you have (fix IP or Dynamic IP)

◆ **Configure FAQ**

**Q1: Can I change Router administrator user name & password?**

User name can not be changed, you only can change password, maximum Character length for password can up to 30 with case sensitive

**Q2: Default SW function is restore factory default value only?**

No, the switch function can be configured to perform following function.  
“Restore factory default value” or “Restore latest configuration file”.

**Q3: How can I know Router system status & each interface activity if I want to know whether the configuration is correct or not?**

Using “Data Monitor” function, you can monitor router traffic status.

**Q4: How to choose “working mode” when I start to configure router?**

This router provide 3 different working mode, depend what kind of software Function & throughput can meet your requirement.

**Q5: Can DMZ host function support PPPoE & FIX IP mode?**

Yes, in DMZ function, you can use specific DMZ host by PPPoE mode or FIX IP mode.

**Q6: What is configuration file back up & Restore meaning?**

You can save /restore router configuration file to/from PC, in order To prevent router crush or load factory default by accident.

**Q7: How to check real time configuration parameter?**

This router can list real time “ configuration parameter” to administrator.  
Just using “configuration show” function.

◆ **User Management FAQ**

**Q1: Can I specific dedicate packet (by IP address & Port number) through dedicate WAN port?**

Yes, using “IP Binding” function when you set up router.

**Q2: Can I specific dedicate packet (by application /protocol) through dedicate WAN port?**

Yes, using “Bandwidth Control” function when you set up router.

**Q3: Can I specific dedicate packet (by IP address) through dedicate WAN port?**

Yes, using “QoS” function when you set up router.

**Q4: Can I assign fix IP address to dedicated PC when I using HDCP?**

Yes, using “Configure LAN & DHCP” function, you can assign fix IP address To PC by match PC NIC card MAC address.

◆ **Bandwidth Management FAQ**

**Q1: How to limit FTP or other application bandwidth usage?**

In “Bandwidth Usage” function, you can set bandwidth using by each application

**Q2: Can I control bandwidth usage for each computer in my network?**

Yes, in “QoS” function, allow you to control each PC bandwidth usage.

◆ **Router Management FAQ**

**Q1: Can I check router status from Internet?**

Yes, just enable router “remote configure” function.

**Q2: What kind of data I can see from “Data Monitor” function?**

You can see “real time packet” & “accumulated packet” for each port

**Q3: How is link failure detected?**

Enable “Health Check” function, router will detect ADSL link status.

**Q4: How do I know when ADSL link has failed?**

By “Mail Alert” function, router can send mail to administrator when Detect critical condition.

◆ **Internet Access FAQ**

**Q1: What if I have different speed at ADSL link?**

There is no problem for Router to connect ADSL line with different speed

**Q2: How to choose “Load Balancing “ working mode?**

If ADSL line have same speed, we suggest you to choose “session mode”.

With different ADSL speed, you can use “Weight Round Robin” or “Traffic mode”

**Q3: Can I connect Router WAN port to another device (Switch, router)?**

Yes, Router WAN port can be connect to another device, but need to point Out where is gateway address to let Router know

**Q4: What happen, if I get multiple IP address from ISP?**

You can assign extra IP address to DMZ host or VoIP GW

**Q5: Web site with SSL feature (Banking, Game Server) will not allow access with multiple IP address, how to solve this issue?**

Using Router “IP Binding” function, let outgoing data packet to SSL Web Site will only use dedicated ADSL line.

**Q6: Does Router support VPN pass through function?**

Yes, router support IPSEC & PPTP pass through function

**Q7: Does Router support VOIP pass through function**

Yes, router have included H.323 VoIP ALG inside

**Q8: Can I limit packet go to dedicated WAN port just by protocol port number?**

Yes, use “ special port assignment “ function in Load Balance field.

**Q9: Can I limit packet go to dedicated WAN port just by IP address?**

Yes, use “ special IP assignment “ function in Load Balance field.

**Q10: Sometime virus attack network by using “PING” command from Internet, Can I set up router to reject “PING” command from Internet?**

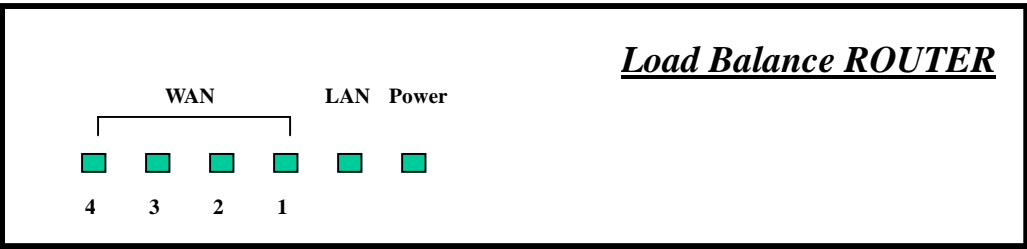
Yes, use “ enable/disable “ function in DoS field.

# CHAPTER 2 ROUTER INTRODUCTION

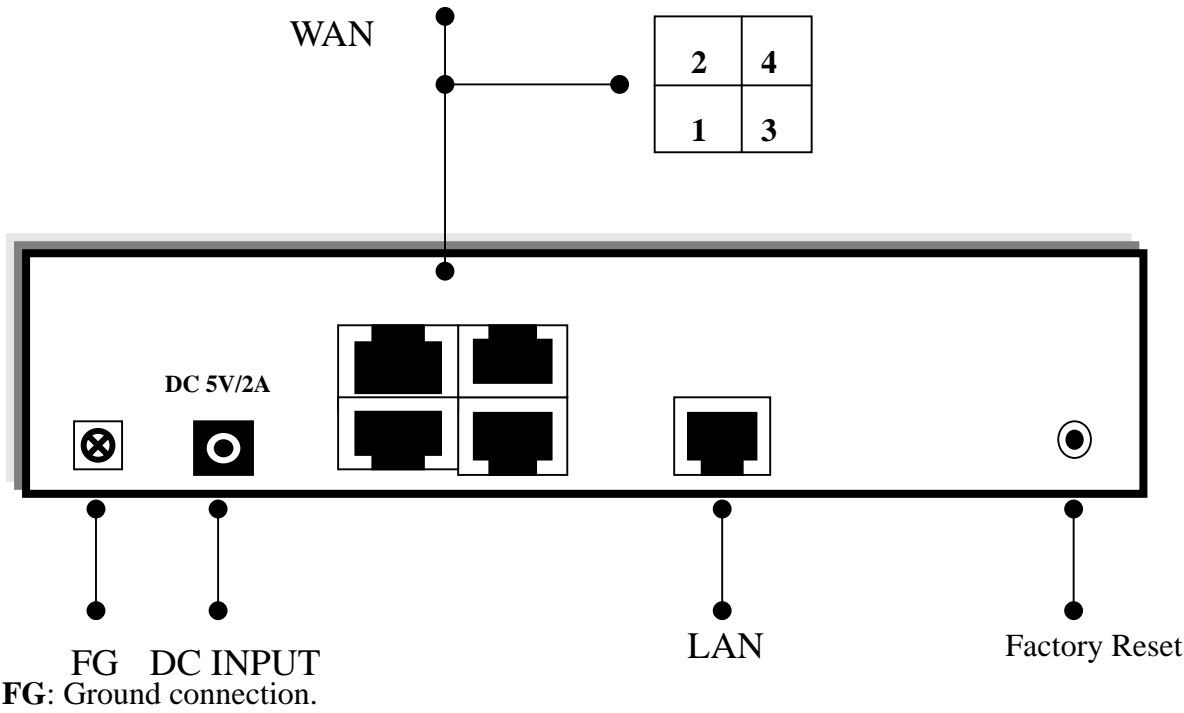
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## 2.1. 4 \*WAN Ports Broadband Router

### 2.1.1 Front Panel View



### 2.1.2 Real Panel View



**DC 5V:** Connecting to AC adapter.

**WAN:** Broadband Router provides four RJ45 type WAN port connecting to broadband transmission equipments such as ADSL or CABLE Modem via

RJ45 cable.

**LAN:** Broadband Router provides one RJ45 type LAN port connecting to your network devices such as Hub/Switch via RJ45 cable. Using a HUB/Switch will allow more PC connecting to Broadband Router.

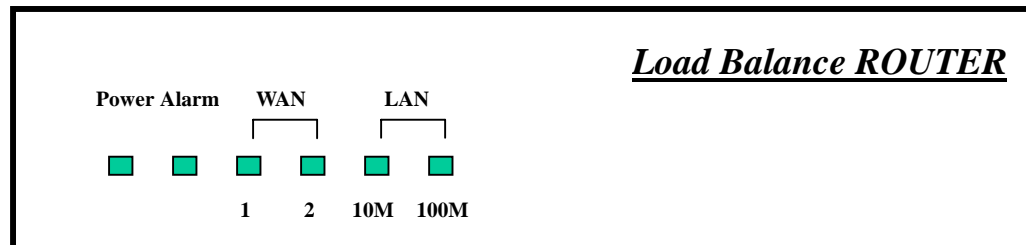
**Factory Reset:** If Broadband Router occurs any system crash, you may press this button to reload factory default value or reset back to latest configuration file

### 2.1.3 LED Indicator

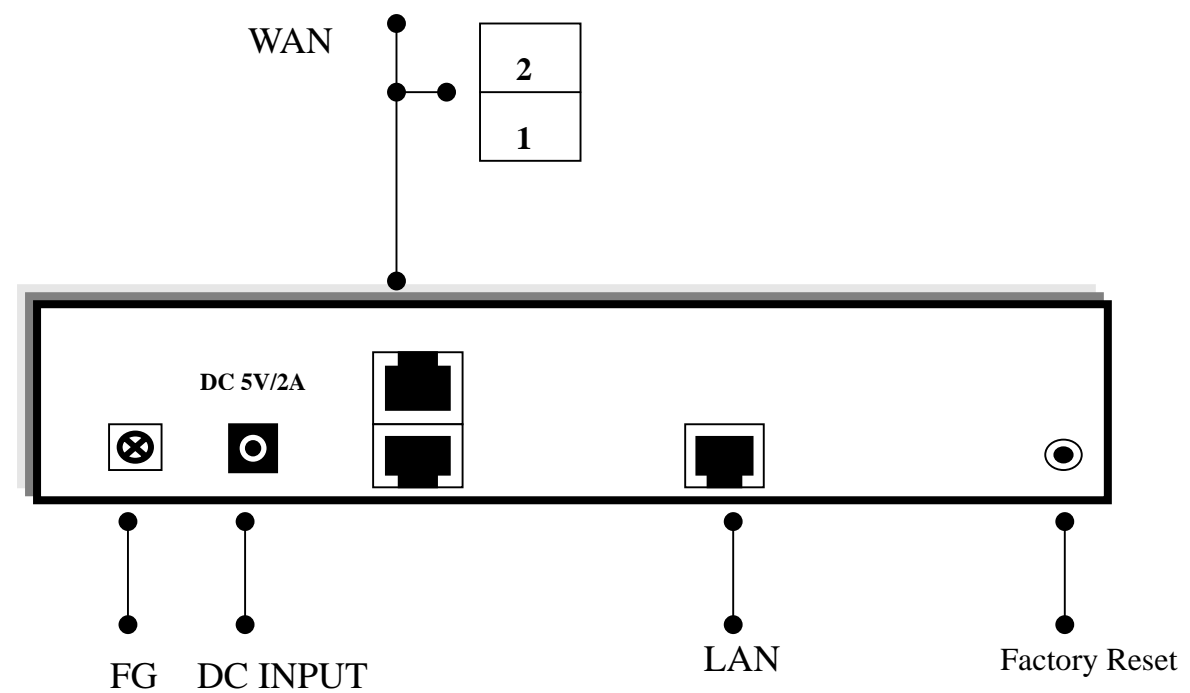
LEDs	Indication	
WAN1~4	Off	Disconnected or undetected
	Green	Linked
	Green Flash	Data Transmission
	Red	Collision
LAN	Green	Link 100M
	Green Flash	100Mbps Data Transmission
	Off	Disconnected or undetected
	Orange	Link 10M
	Orange Flash	10M Data Transmission

## 2.2. 2 \*WAN Ports Broadband Router

### 2.2.1 Front Panel View



### 2.2.2 Real Panel View





**FG:** Ground connection.

**DC 5V:** Connecting to AC adapter.

**WAN:** Broadband Router provides two RJ45 type WAN port connecting to broadband transmission equipments such as ADSL or CABLE Modem via RJ45 cable.

**LAN:** Broadband Router provides one RJ45 type LAN port connecting to your network devices such as Hub/Switch via RJ45 cable. Using a HUB/Switch will allow more PC connecting to Broadband Router.

**Factory Reset:** If Broadband Router occurs any system crash, you may press this button to reload factory default value or reset back to latest configuration file

### 2.2.3 LED Indicator

LEDs	Indication	
WAN1~2	Off	Disconnected or undetected
	Green	Linked
	Green Flash	Data Transmission
	Red	Collision
LAN	Green	Link 100M
	Green Flash	100Mbps Data Transmission
	Off	Disconnected or undetected
	Orange	Link 10M
	Orange Flash	10M Data Transmission
POWER	Green	Power on
ALARM	Red	Router crash

## 2.3 Broadband Router Features

### 2.3.1 Software Feature

In order to meet different application usage, you can configure this router to be 3 different working model.

- . Gateway mode
- . Router mode
- . Basic NAT mode (NAT Table can up to 5000 entry)

Each working mode include different features

Function Mode	LAN to WAN Through put	NAT Function	DMZ, Dos Virtual Ser IP Filtering	IP Domain	PPPoE Dial up
Gateway Mode	Good	Yes	Yes	Legal To Illegal	Yes
Router Mode	Best s	No	No.... (1)	Legal To Legal (4)	No
Basic NAT Mode (2)	Good	Yes	Yes...(3)	Legal To Illegal	Yes

(1) All NAT related function will be disable

(2) The purpose for this mode is to have high through-put and NAT function both

(3) Simple NAT function available

(4) Act like a multi-LAN port router

Working Mode / Function List

Function Mode	Gateway	Router	Basic NAT
PPPoE/ Dial Up DSL Type	V		V
Local IP Filtering	V		
Remote IP Filtering	V		
Intrusion Security	V		
Dos Defense	V		
URL Filtering	V		
Remote Configure	V	V	V
Virtual Server	V		V
DMZ Host	V		V
Multi-NAT	V		V
IP Binding	V		V
Load Balance	V		V
Dynamic DNS	V		V
Mail Alert	V		V
Time Zone	V	V	V
System Log	V	V	V
Mac Address Clone	V	V	V
Configure Proxy	V		V
Routing protocol	V	V	V

DOD (PPPoE)	V		V
Bandwidth Usage Control	V		V
QoS	V		V

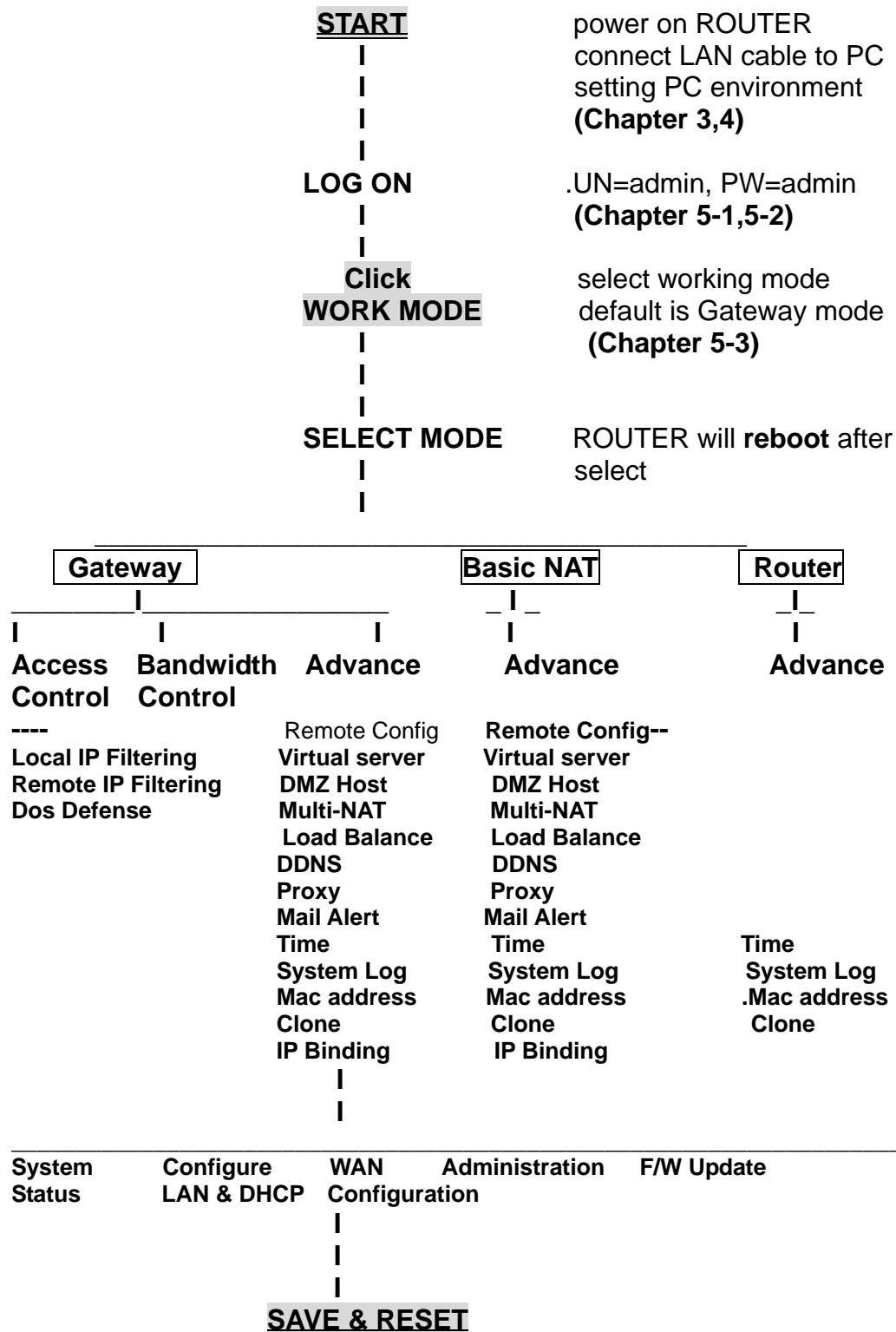
### 2.3.2 Factory Default Value

Value		Default	Enable	Disable
Function				
Work Mode	Gateway	V		
	Router			
	Basic NAT			
System Status	Link Status		V	
	Data Monitor		V	
WAN Configure	Connect to	Internet		
	Health Check			V
	WAN Type	Dynamic IP		
	Schedule			V
Bandwidth Usage Control				V
Configure LAN & DHCP	DHCP server		V	
Routing Table	Static Route			V
	Dynamic Route			V
Access Control	Local IP Filtering			V
	Remote IP Filtering			V
	DoS Defense		V (Some items)	
	URL Filtering			V
Advance	Remote Config			V
	Virtual Server			
	DMZ Host			V
	Multi-NAT			V
	IP Binding			V
	DDNS			V
	Proxy			V
	Mail Alert			V
	Time Zone			V
	System Log		V	
	MAC Address Clone			V
	Password			V

Administration				
	Backup & Restore			V
	Load Factory Default	Load Default		
	Display		V	
Save & Reset				V

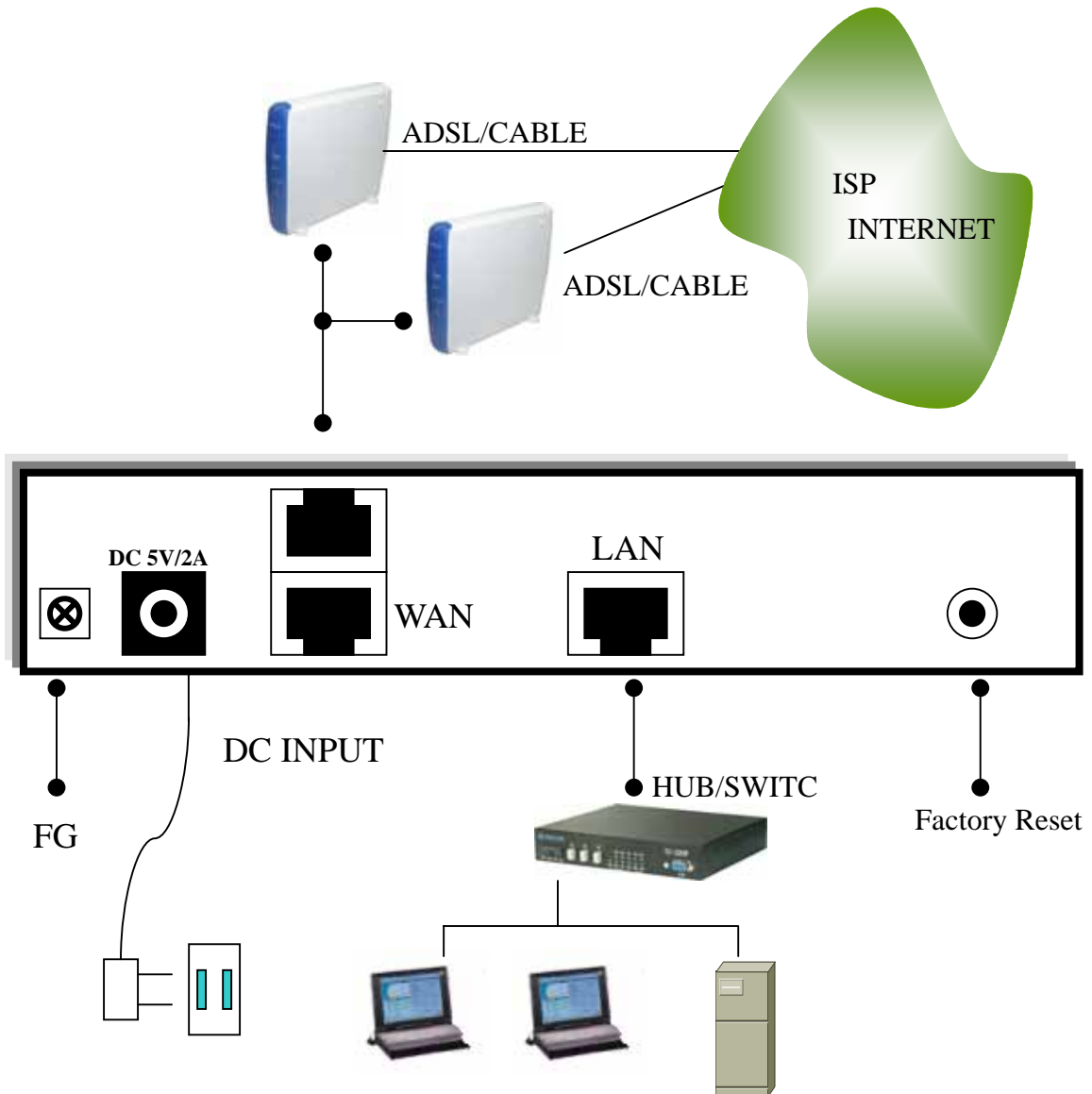
### 2.3.3 How to configure router

This equipment provide 3 working mode for different usage, in order to set proper parameter in each function/mode, you can follow this flow chart before you start to configure router.



## CHAPTER 3. CONNECT ROUTER

### 3.1 Connection Diagram



Broadband Router provides one LAN port connecting to your network devices such as PC, HUB and SWITCH via RJ45 cable. Using a HUB/SWITCH will allow more PC connecting to Broadband Router. WAN ports are using to connect your ADSL or CABLE Modem to the broadband ISP.

For RJ45 cable type, both WAN/LAN port support auto MDI/MDIX Function, you can choose cross over type or straight type RJ-45 cable

### **3.2 Connection Procedure**

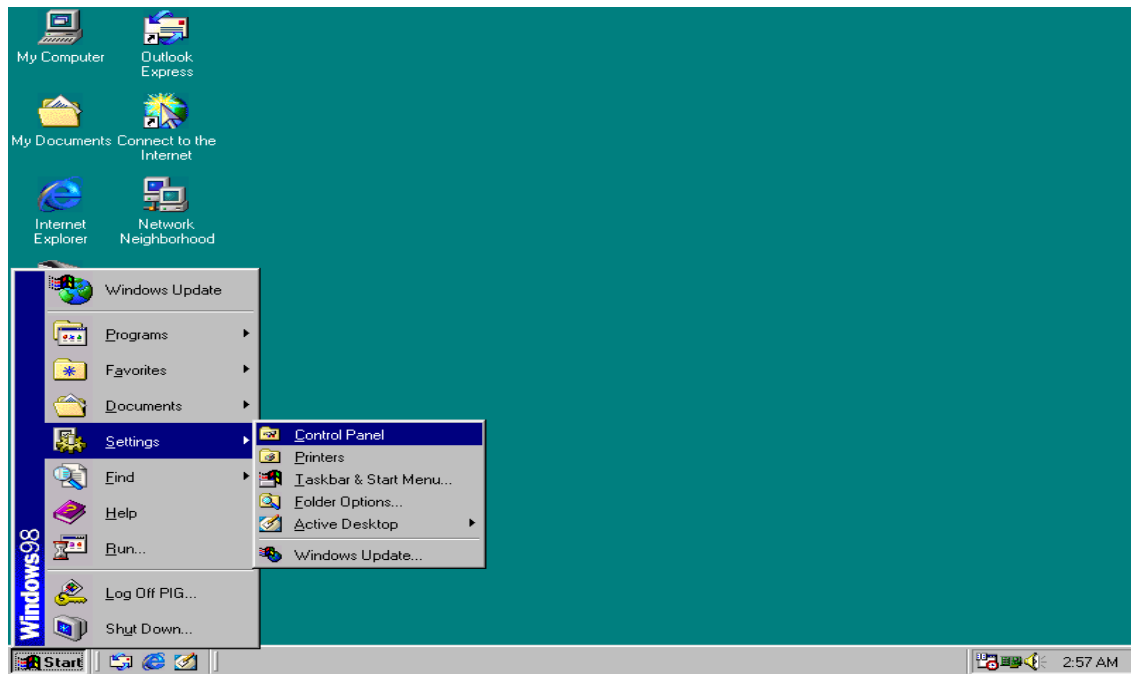
1. Plug in DC power adapter to Router.
2. Connect the Router WAN port RJ45 modular jack to ADSL/CABLE Modem Ethernet port with the RJ45 cable.
3. Connect the Router LAN port RJ45 modular jack to HUB/SWITCH LAN port by RJ45 cable.
4. Connect PC LAN card port to HUB/SWITCH LAN port.
5. Connect FG to ground
6. Plug in AC power cord to power source
7. Go to Chapter 2. section 2.3.3 How to configure router.



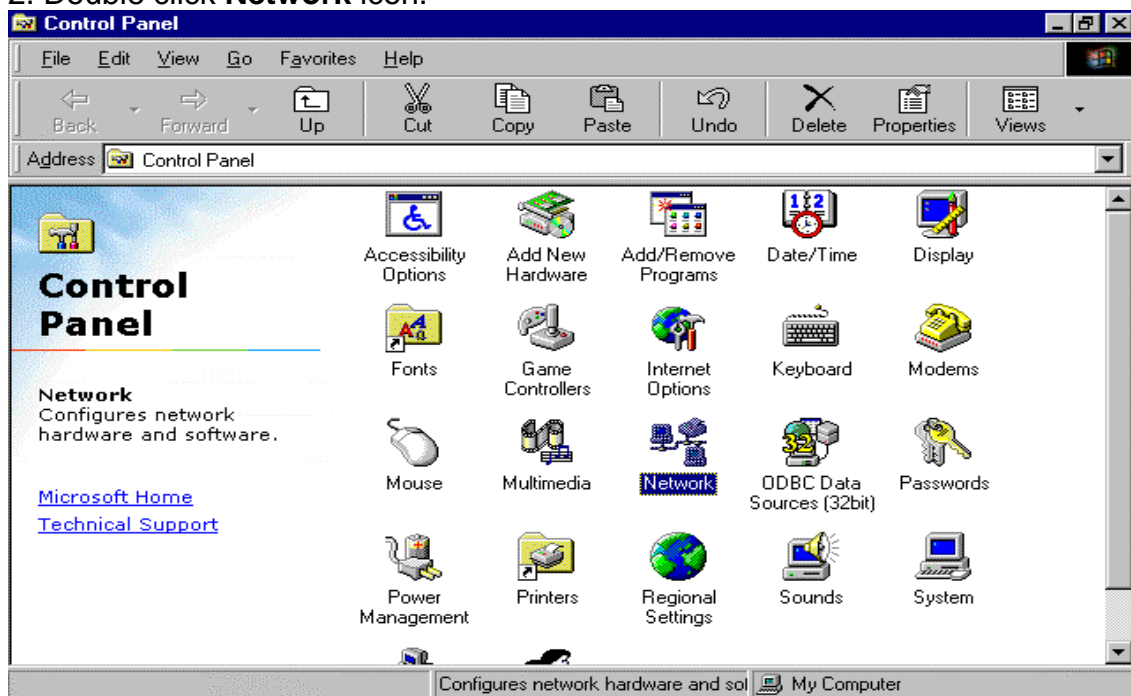
# CHAPTER 4. PREPARE COMPUTER TCP/IP ENVIRONMENT

## 4.1 Windows 95/98/ME

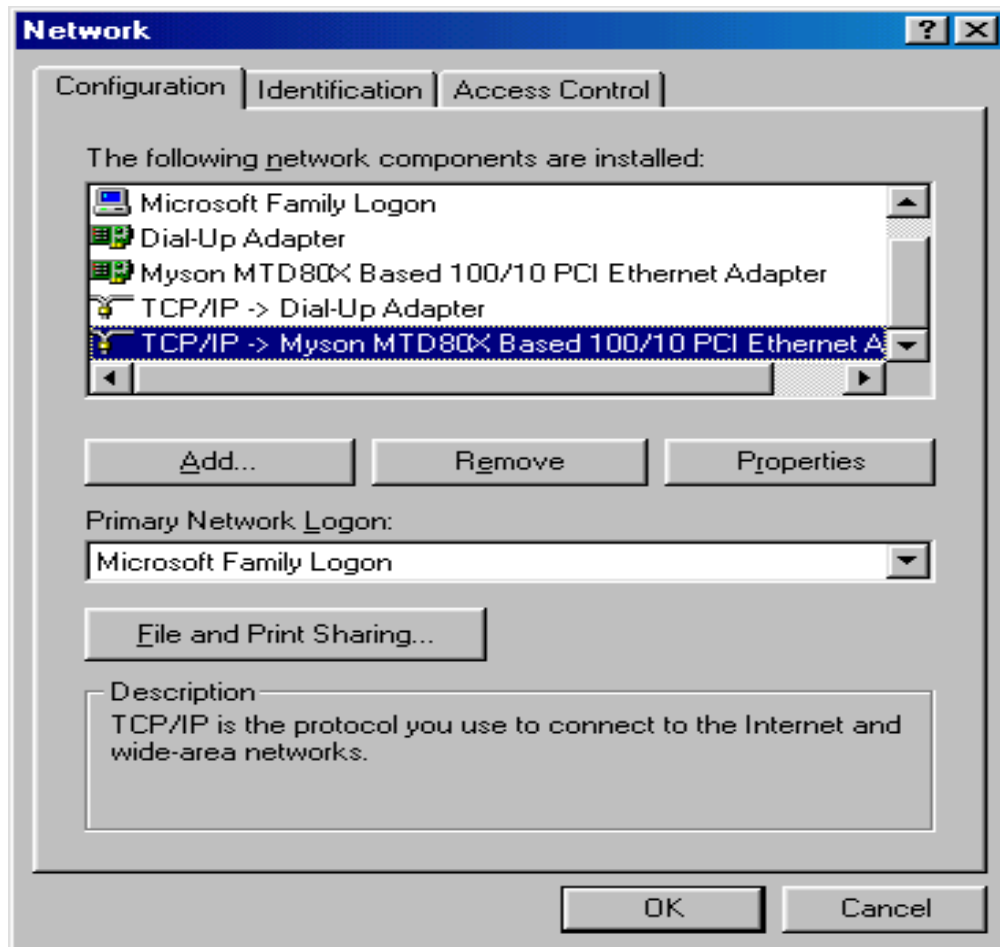
1. Select **Control Panel** from **Start→Settings**.



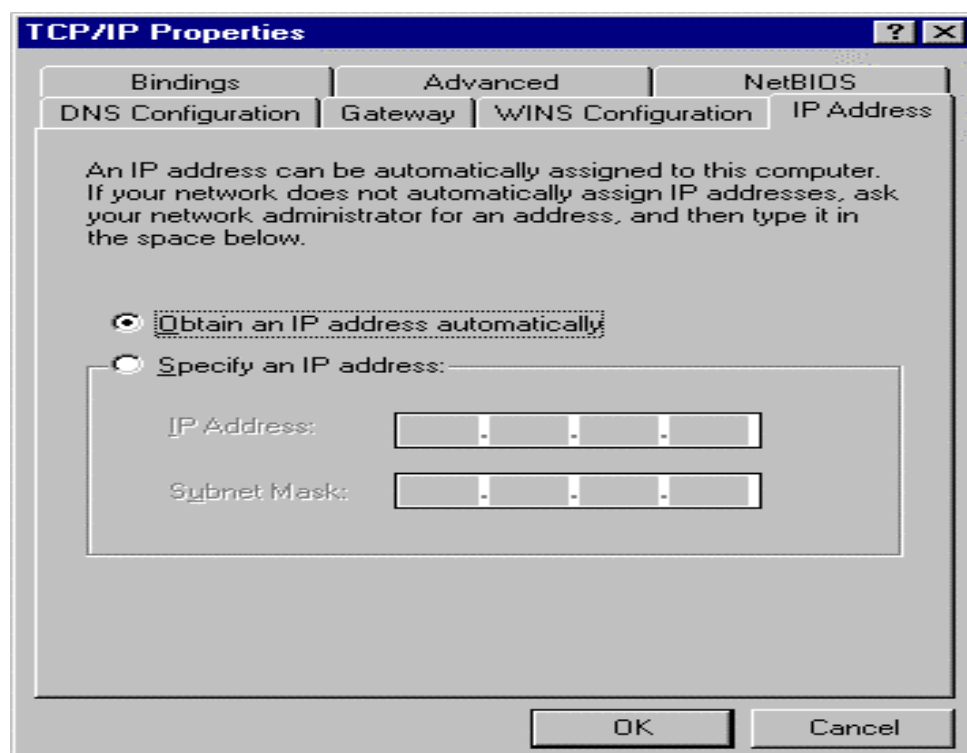
2. Double click **Network** icon.



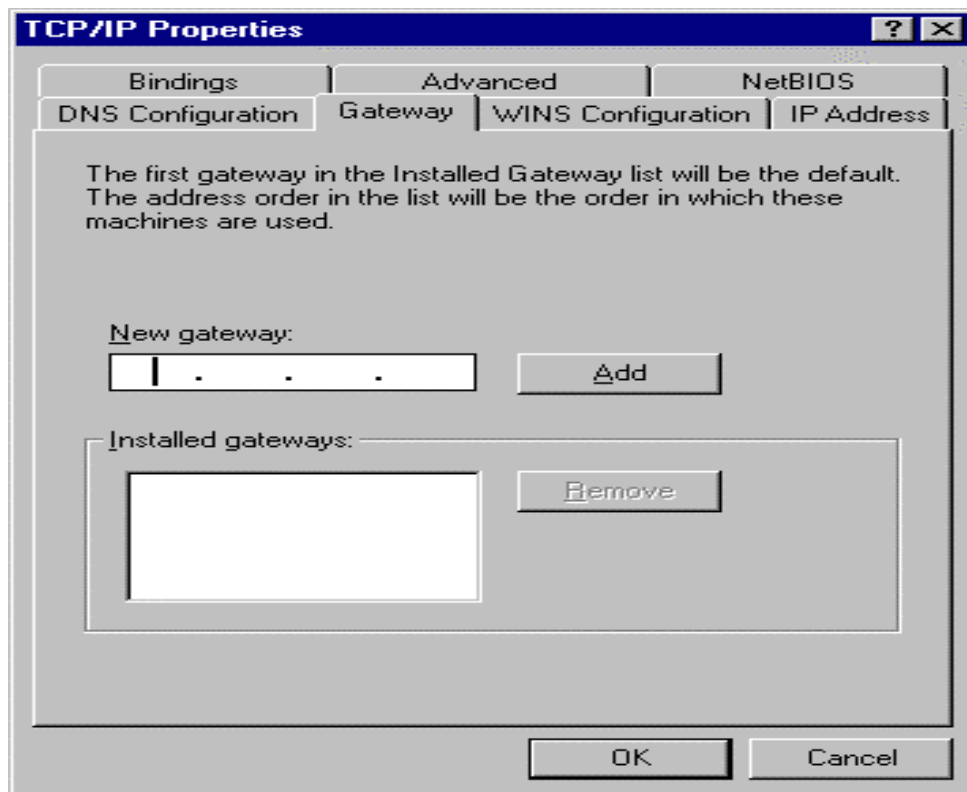
3. Select TCP/IP->**xxxx**, where **xxxx** is the name of network adapter you are using and then click **Properties**.



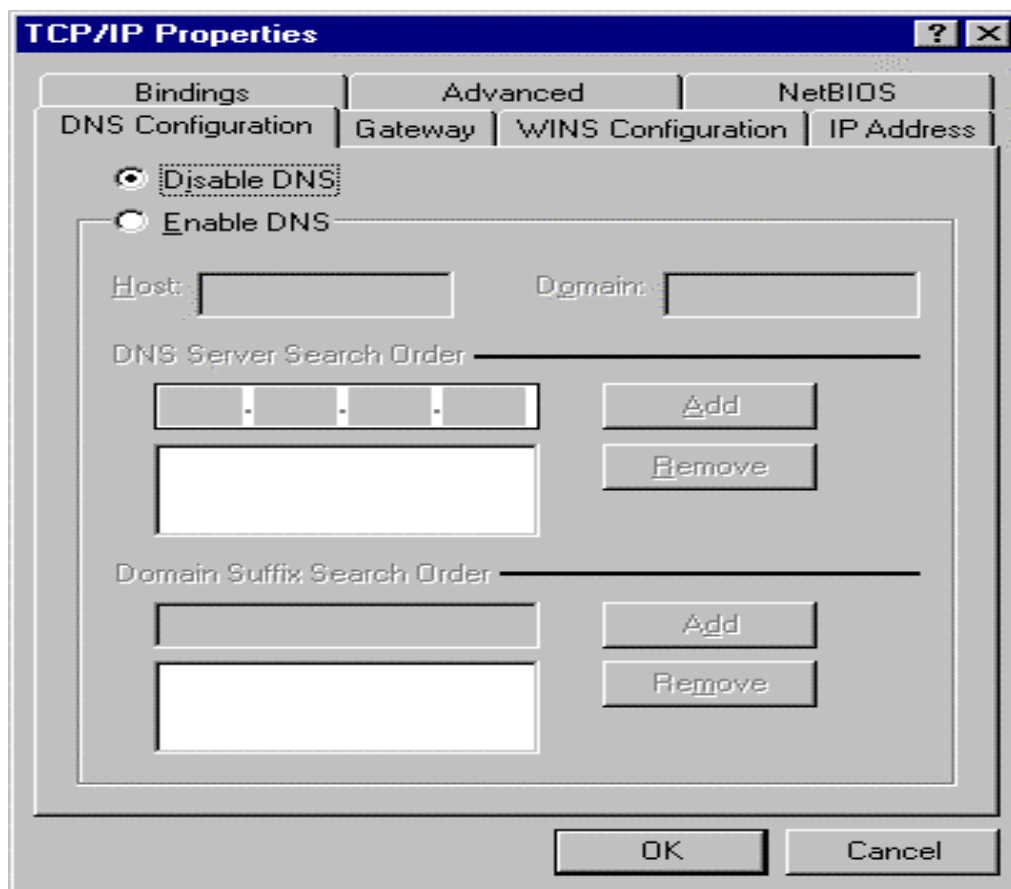
4. Verify your IP Address option is at **Obtain an IP address automatically**.



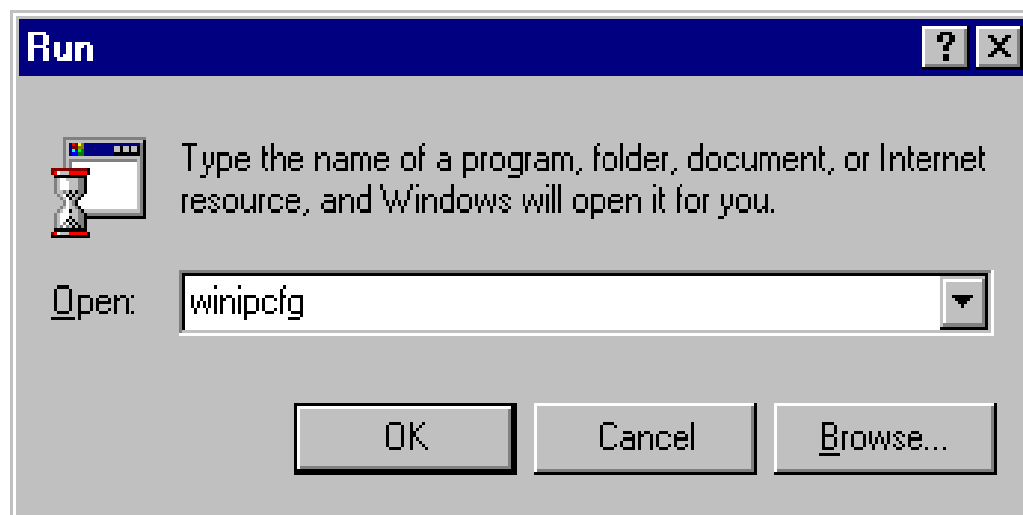
5. Let your Gateway setting remain empty.



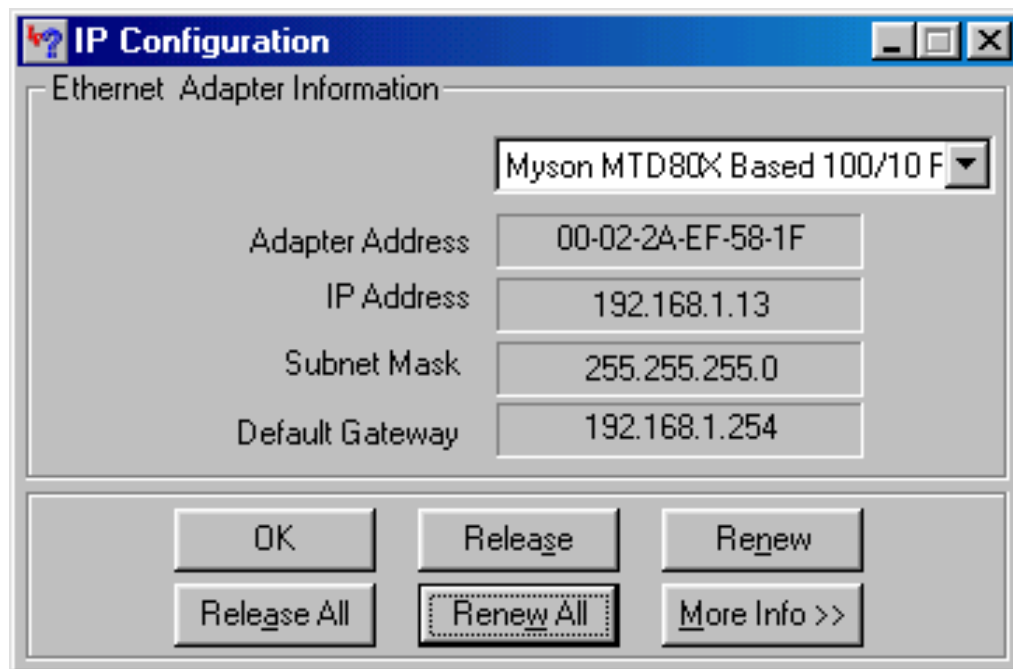
6. Verify your DNS Configuration option is at **Disable DNS**, The Broadband Router will assign it automatically, then click **OK**. But also you may select **Enable DNS**, then key in the value manually if you preferred.



7. Select **Run** item from **Start** menu. Type in **winipcfg** and then click **OK**.



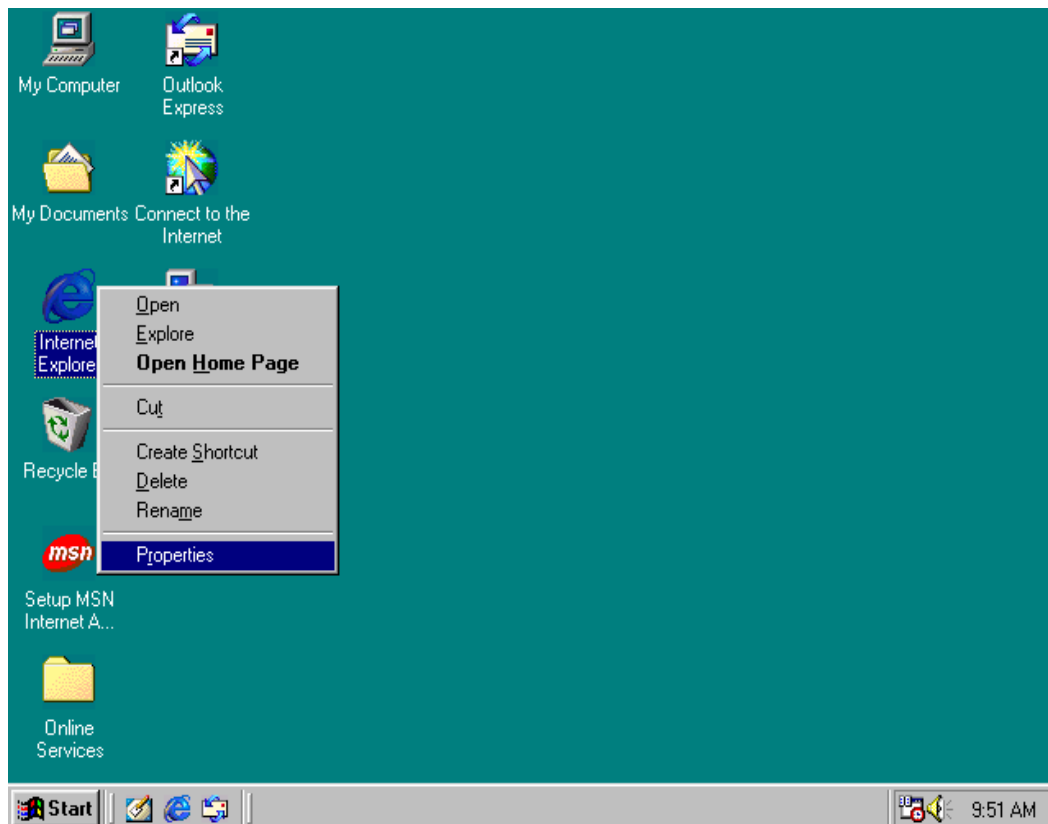
8. Select the network adapter you are using from pull-down list. Click **Release All** and then **Renew All** to get the information about IP Address, Subnet Mask, and default Gateway that Broadband Router gained. Then click **OK**.



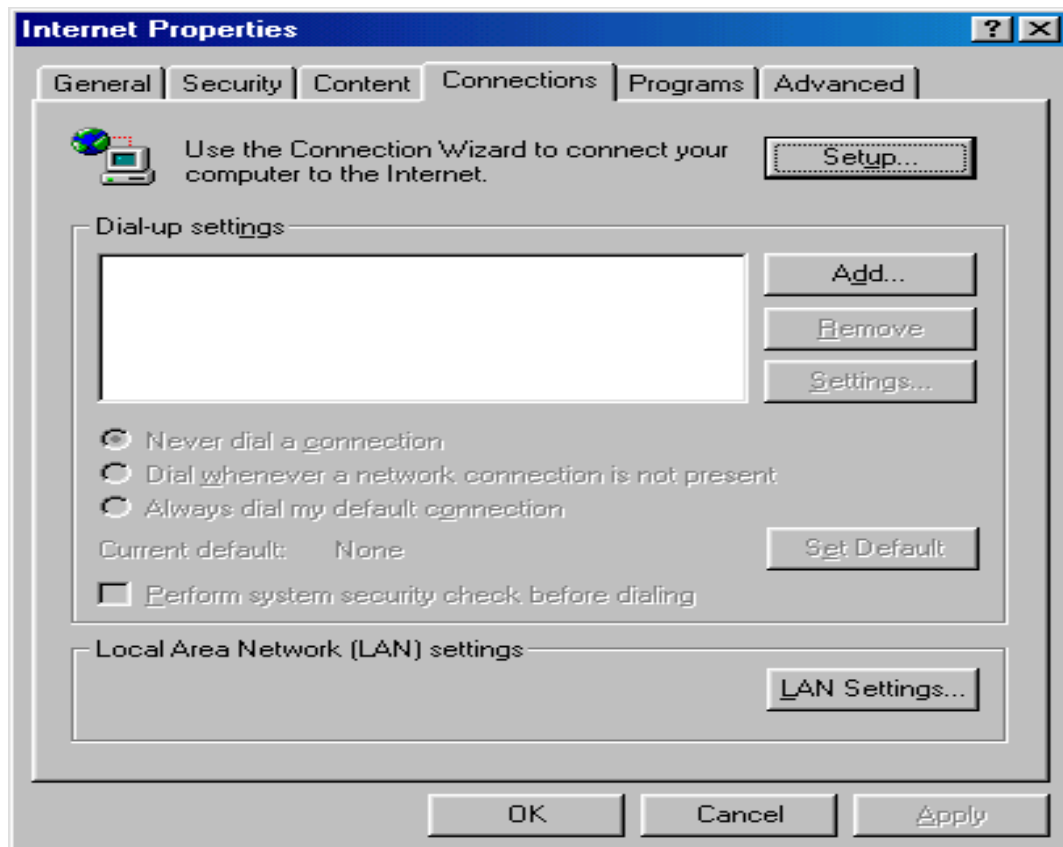
9. You must uncheck the Proxy server function before login the web configuration. The way of uncheck the Proxy server in Internet Explorer and Netscape is described as follow.

## Internet Explorer

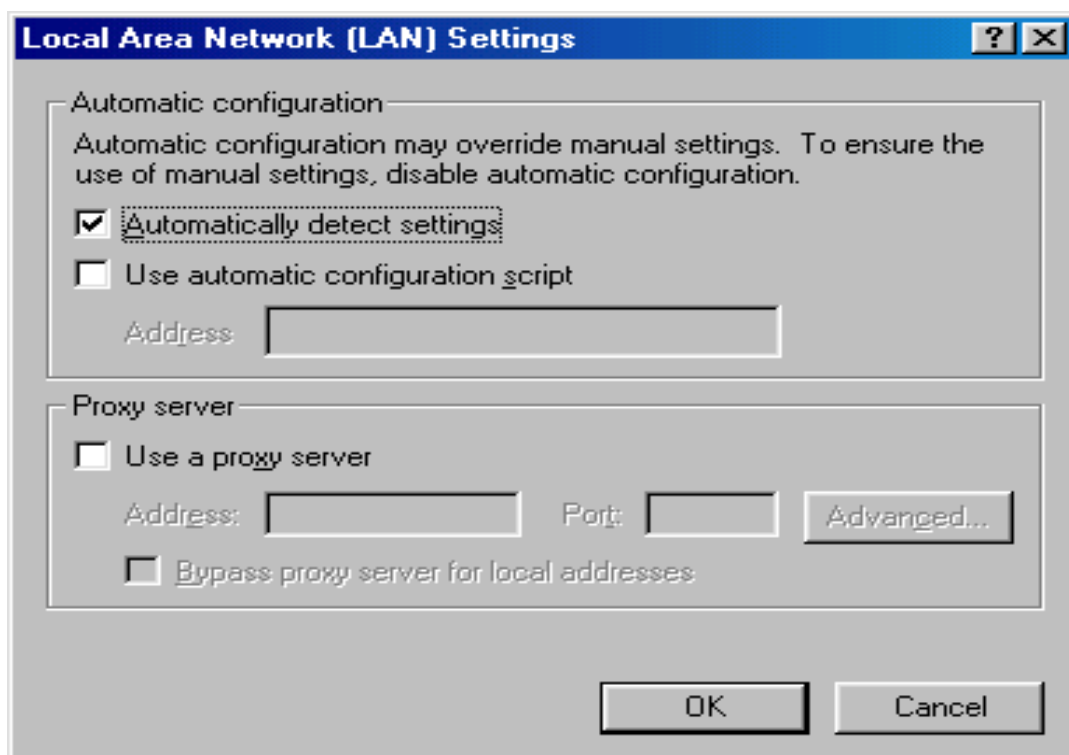
- Highlight **Internet Explorer** on desktop and then right-click your mouse to select **Properties**.



- Select LAN Settings in **Connections** tab.

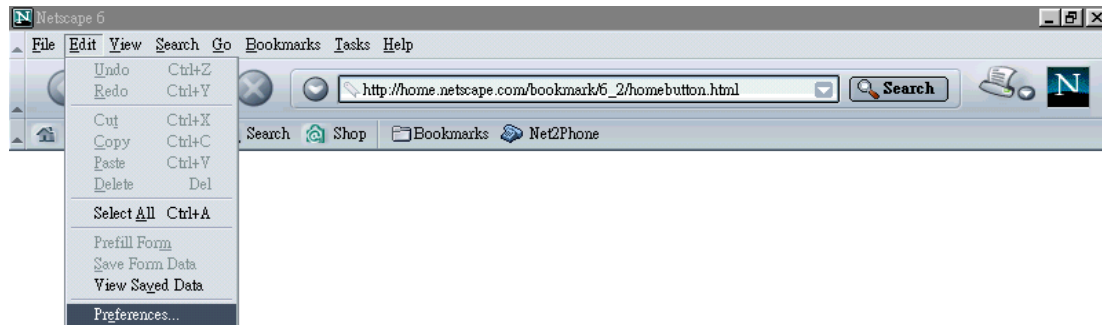


- Uncheck the check box of **Proxy server** and then click **OK**. (You may enable Proxy server function after logout if you need to use it.)

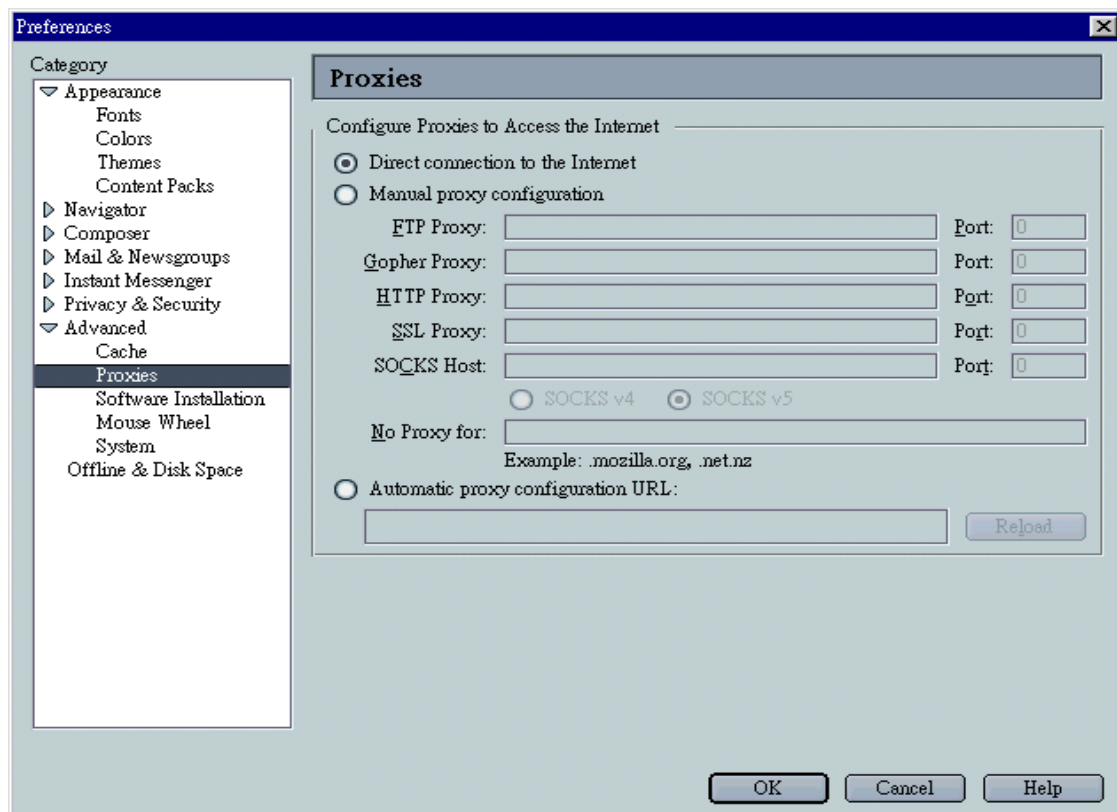


## Netscape

- Open Netscape and click the stop button. Click **Preferences** from **Edit** pull-down list.



- Select **Proxies** from **Advanced** item. Select **Direct connection to the Internet** and then click **OK**.





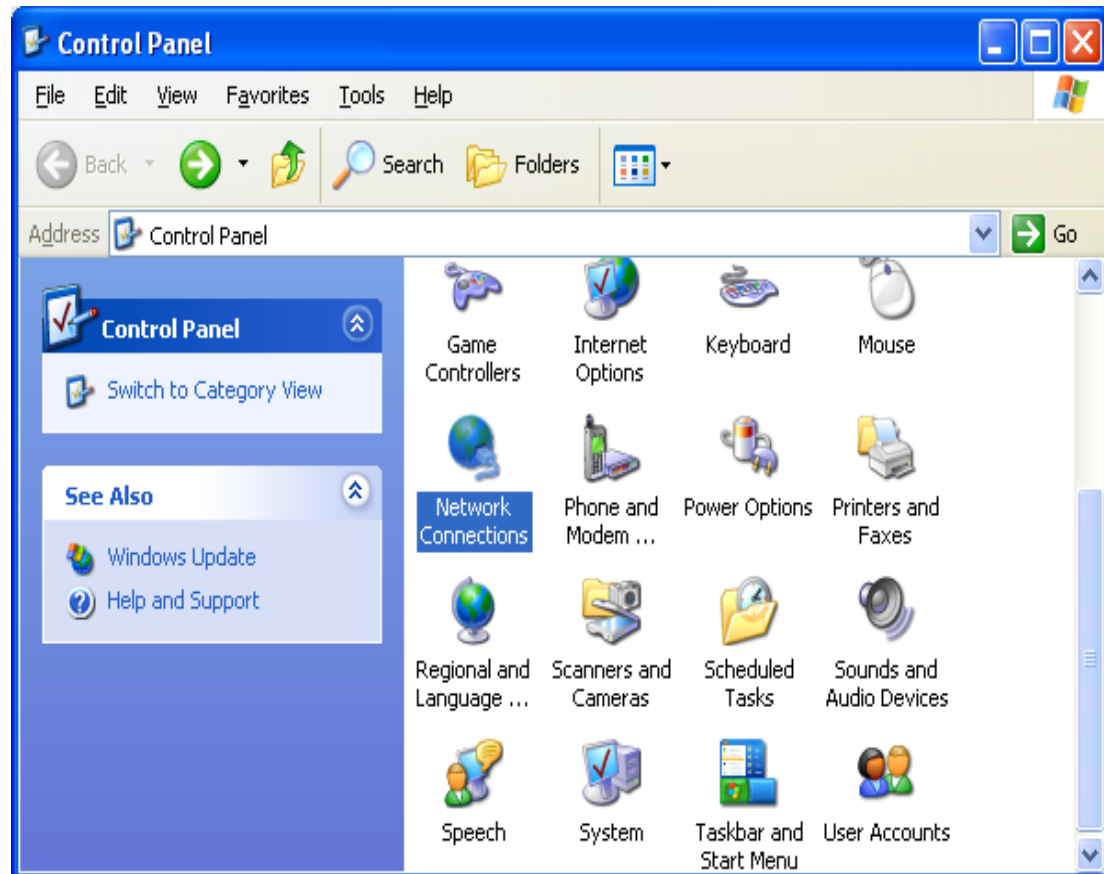
10. Type the default IP address **192.168.1.254** the address bar of the browser to open web configuration.

## 4.2 Windows 2000/XP

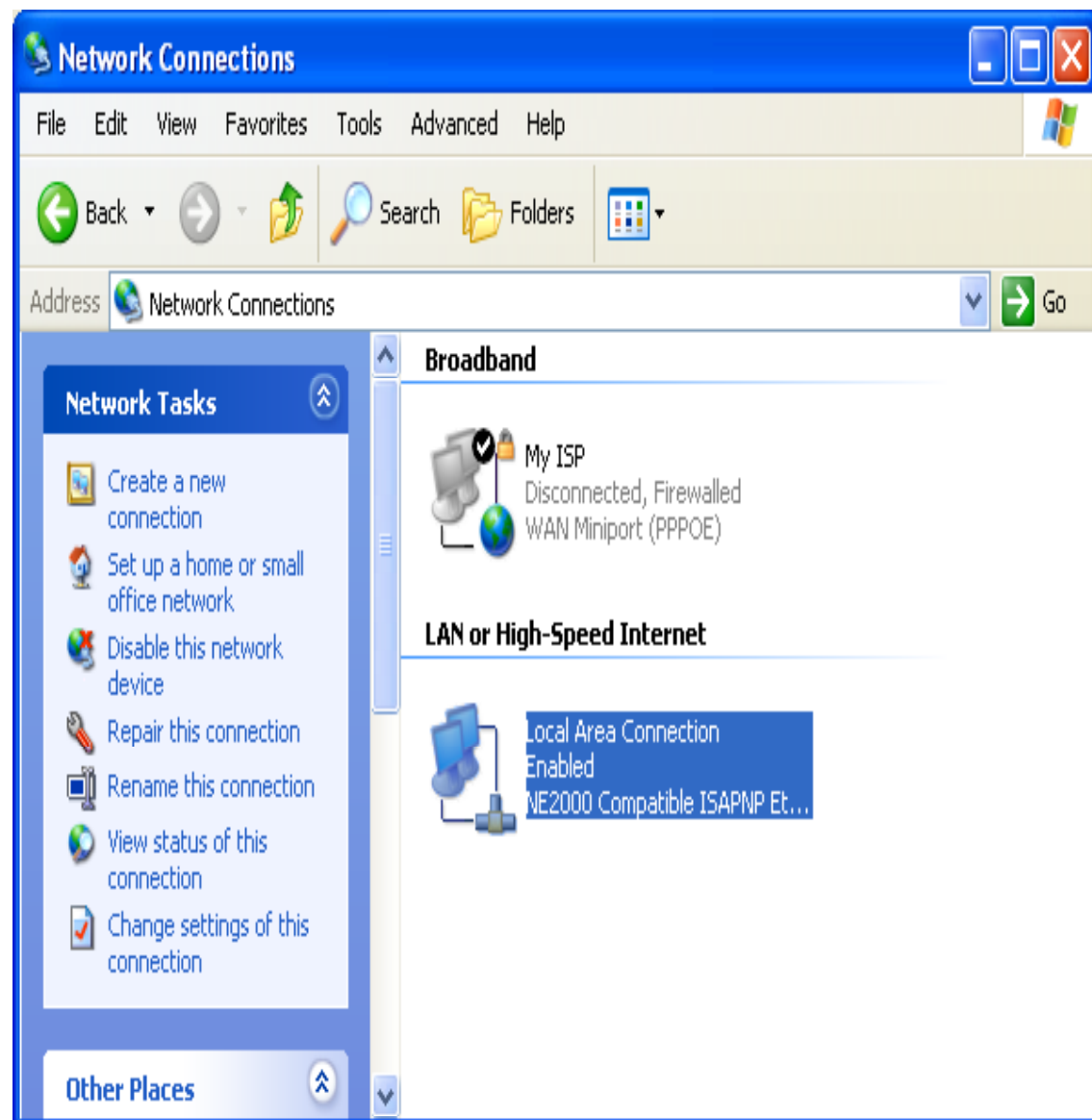
1. Select **Control Panel** from **Start**.



2. Double click **Network Connections** icon.

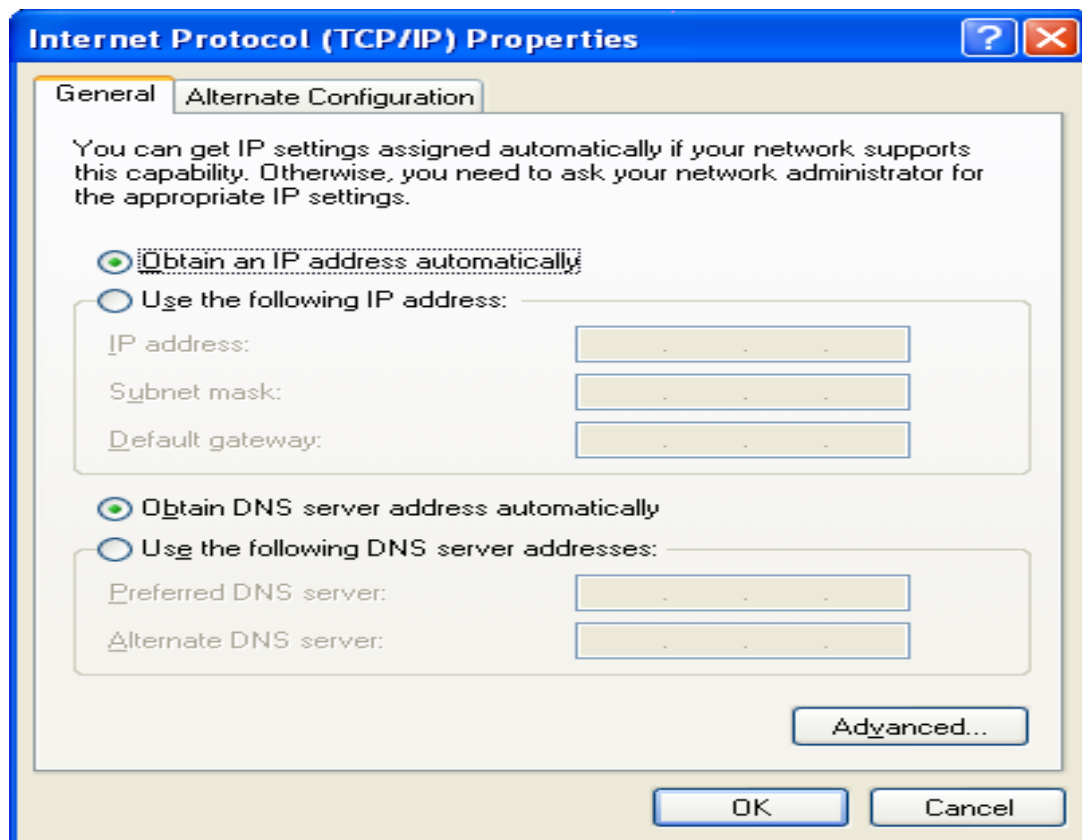


3. Choose the network adapter you are using and then right-click mouse to select **Properties**.

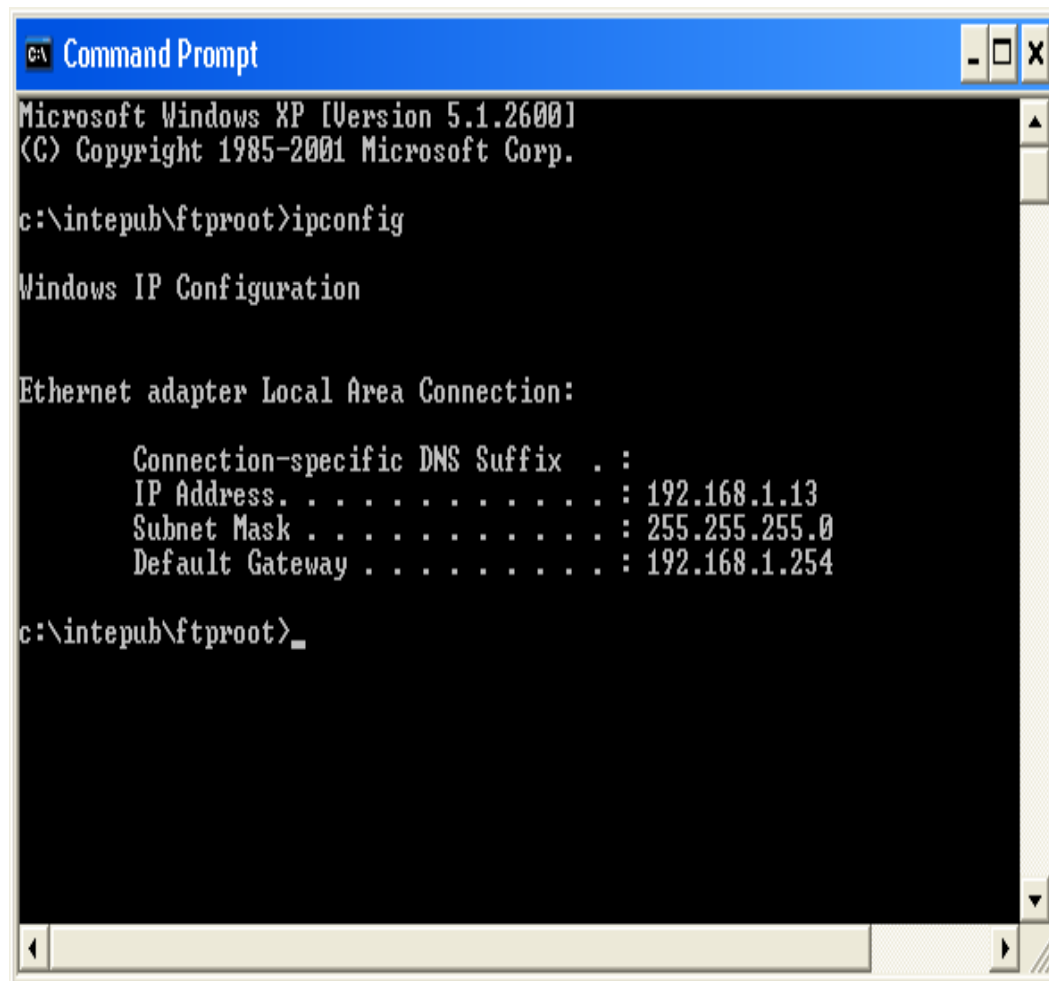


4. Select **Internet Protocol [TCP/IP]** and then click **Properties**.

5. Select **Obtain an IP address automatically** and **DNS server address automatically**. Then click **OK**.



6. Key in **ipconfig** from **Start→All Programs→Accessories→Command Prompt** to view the gained IP Address, Subnet Mask and Default Gateway.



```
C:\ Command Prompt
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

c:\intepub\ftproot>ipconfig

Windows IP Configuration

Ethernet adapter Local Area Connection:

    Connection-specific DNS Suffix  . : 
    IP Address. . . . . : 192.168.1.13
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 192.168.1.254

c:\intepub\ftproot>
```

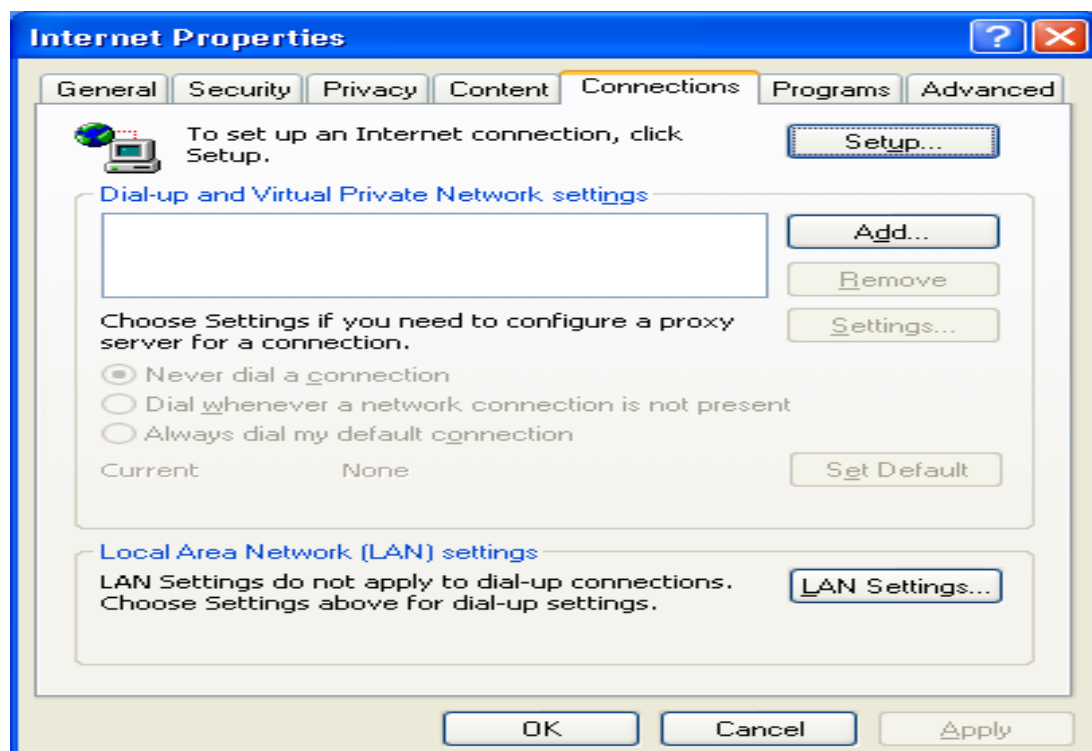
7. You must uncheck the Proxy server before logging the web configuration.

## Internet Explorer

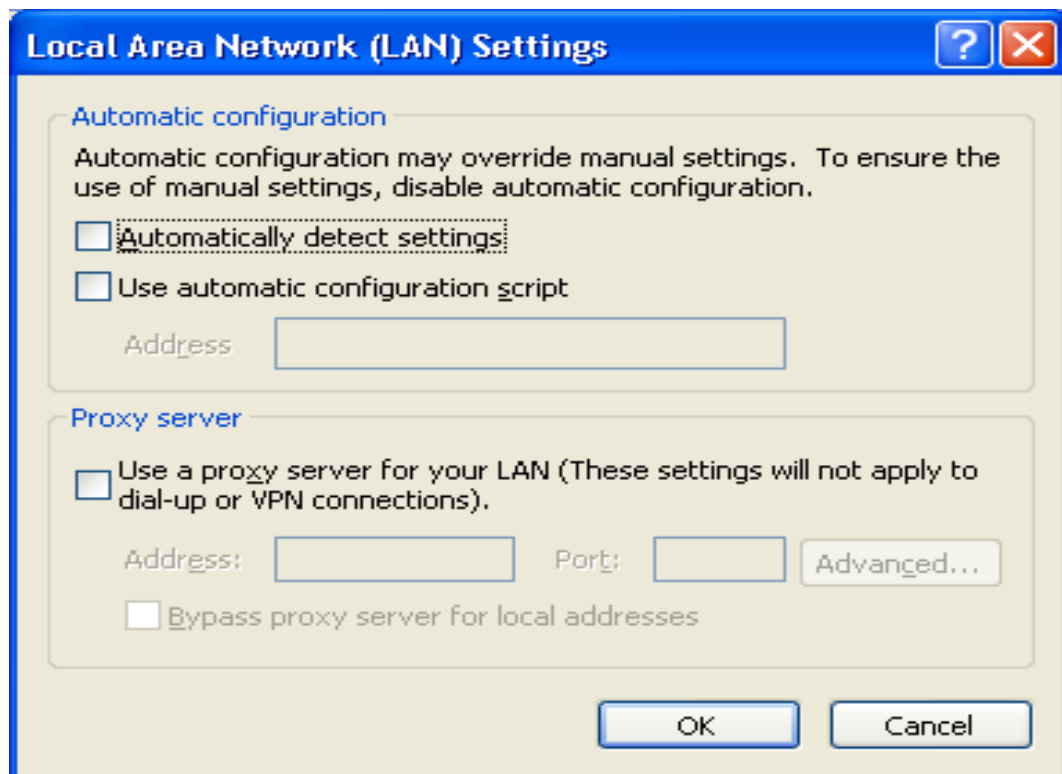
- Select **Internet Explorer** from **Start** and then right-click your mouse to select **Internet Properties**.



- Select **LAN Settings** in **Connections** tab.



- Uncheck the check box of **Proxy server** and then click **OK**. (You may enable Proxy server function after logout the web configuration if you need to use it.)



The image shows a Windows-style dialog box titled "Local Area Network (LAN) Settings". It has a blue title bar with a question mark icon and a close button (X). The dialog is divided into two main sections: "Automatic configuration" and "Proxy server".

**Automatic configuration**

Automatic configuration may override manual settings. To ensure the use of manual settings, disable automatic configuration.

☐ Automatically detect settings

☐ Use automatic configuration script

Address:

**Proxy server**

☐ Use a proxy server for your LAN (These settings will not apply to dial-up or VPN connections).

Address:  Port:

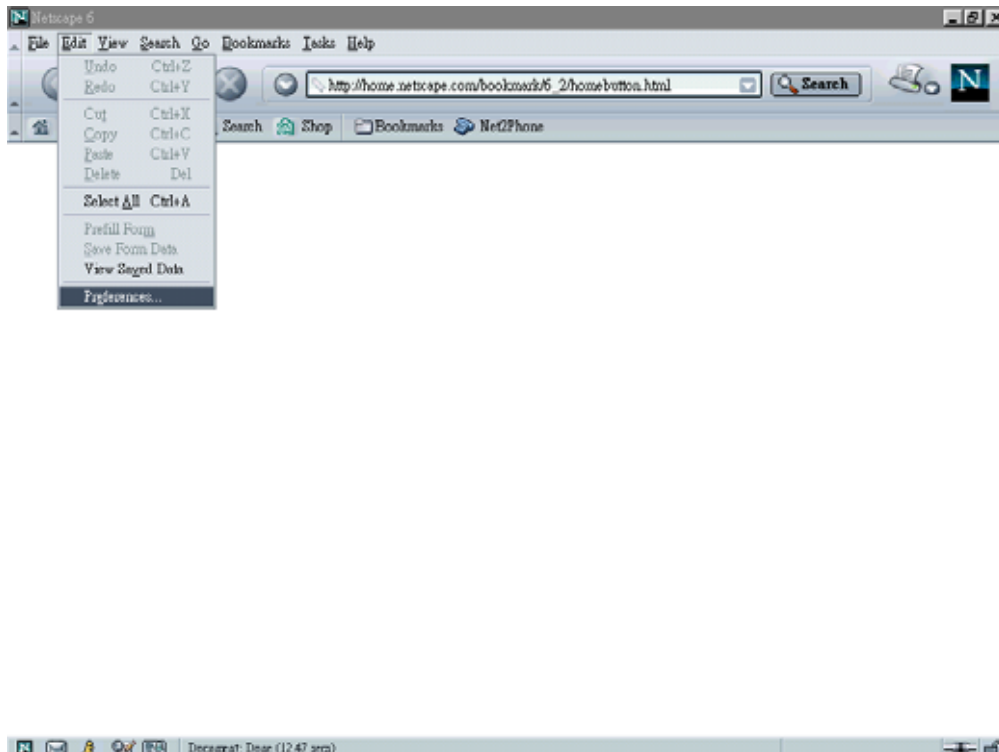
☐ Bypass proxy server for local addresses

At the bottom right, there are two buttons: "OK" and "Cancel".

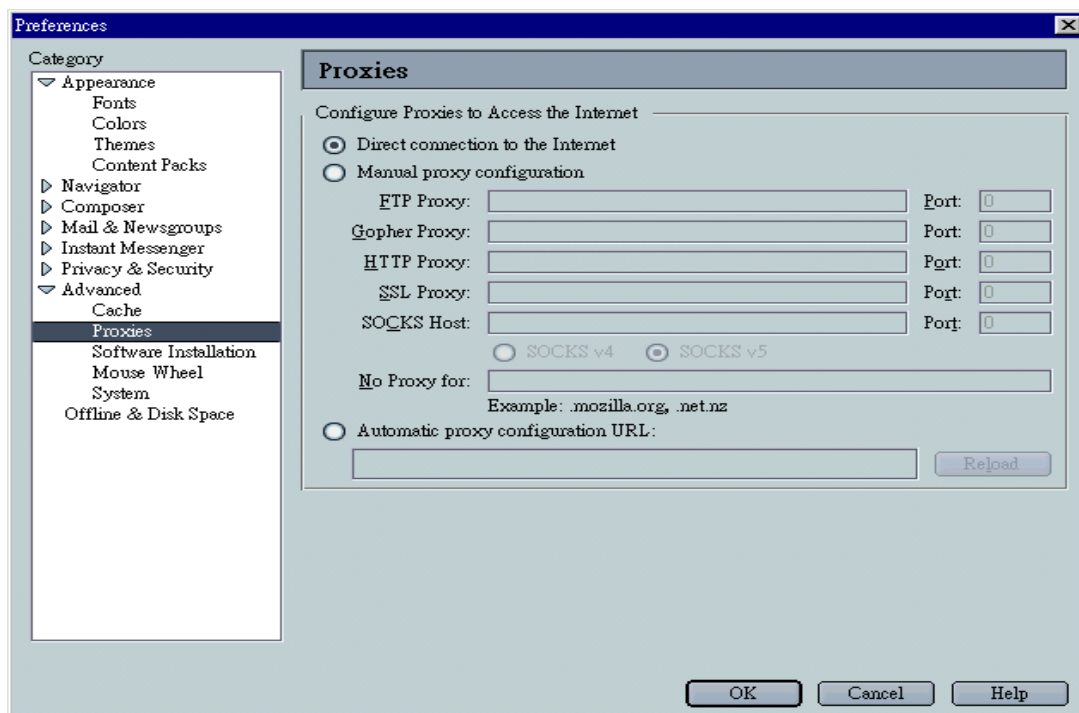


## Netscape

- Open Netscape and click the stop button. Click **Preferences** from **Edit** pull-down list.



- Select **Proxies** from **Advanced** item. Select **Direct connection to the Internet** and then click **OK**.



8. Type the default IP address **192.168.1.254** the address bar of the browser to open web configuration.

# CHAPTER 5 CONFIGURE ROUTER

## 5.1 Administration

### 5.1.1 Log on-

Type the default IP address **192.168.1.254** in the address bar of the IE browser. Then enter default User name and password. The user name and password both are **admin**.

### LOG ON



The image shows a Windows-style dialog box titled "Connect to 192.168.1.254". It features a blue header bar with a question mark and a close button. Below the header is a yellow background area with a key icon. The text "Multi-Homing Gateway" is displayed. There are two input fields: "User name:" with a dropdown menu showing "admin" and a small user icon, and "Password:" with a masked input field showing five dots. Below these fields is a checkbox labeled "Remember my password" which is checked. At the bottom are "OK" and "Cancel" buttons.

Connect to 192.168.1.254

Multi-Homing Gateway

User name: admin

Password:

☒ Remember my password

OK Cancel

Web configuration display includes

- . **Welcome**
- . **Work Mode**
- . **System Status,**
- . **WAN Configure**
- . **Bandwidth Usage Control**
- . **Configure LAN&DHCP**
- . **Routing Table**
- . **Access Control**
- . **QoS**
- . **Load Balance**
- . **Advance**
- . **Administration**
- . **Firmware Update**
- . **Save & Reset**

The various configuration menus are explained below.



You can select various function list in the left side of Welcome display

### 5.1.2 Change Password

Use this function to change the **Password** that is used for access the web configuration. Type in the **Old Password**, **New Password** and **Retype Password** in their respective fields and then click **Ok**, the password will be changed to new one after re-boot.

*“Password **length can up to 30 alphanumeric** characters with case sensitive”*

**WE SUGGESTED YOU TO CHANGE ROUTER PASSWORD AND KEEP IT IN SAFETY PLACE AFTER YOU RECEIVED ROUTER AND FINISH ALL ROUTER PARAMETER SETTING.**

## CHANGE SYSTEM PASSWORD

The screenshot shows a web browser window titled "menu - Microsoft Internet Explorer" with the address bar displaying "http://192.168.1.254/". The main content area has a large orange banner at the top that reads "Load-Balance ROUTER". Below the banner is a sidebar menu with the following items: "Configure LAN&DHCP", "Routing Table", "Access Control", "QoS", "Load Balance", "Advance", "Administration", "Password", "Load Factory Default", "Firmware Update", and "Save & Reset". The "Password" item is selected and highlighted. The main content area displays the "Change System Password" form, which includes three input fields: "Old Password :", "New Password :", and "Retype Password :". Each field contains a series of dots representing masked characters. Below the input fields are two buttons: "Ok" and "Cancel". The status bar at the bottom of the browser window shows "Done" and "Internet".

### 5.1.3 Load Factory Default

Use **Load Factory Default** function to reset all the settings to their factory default values or latest configuration file. Select **Yes** and then click **Ok**, Router will restart automatically.

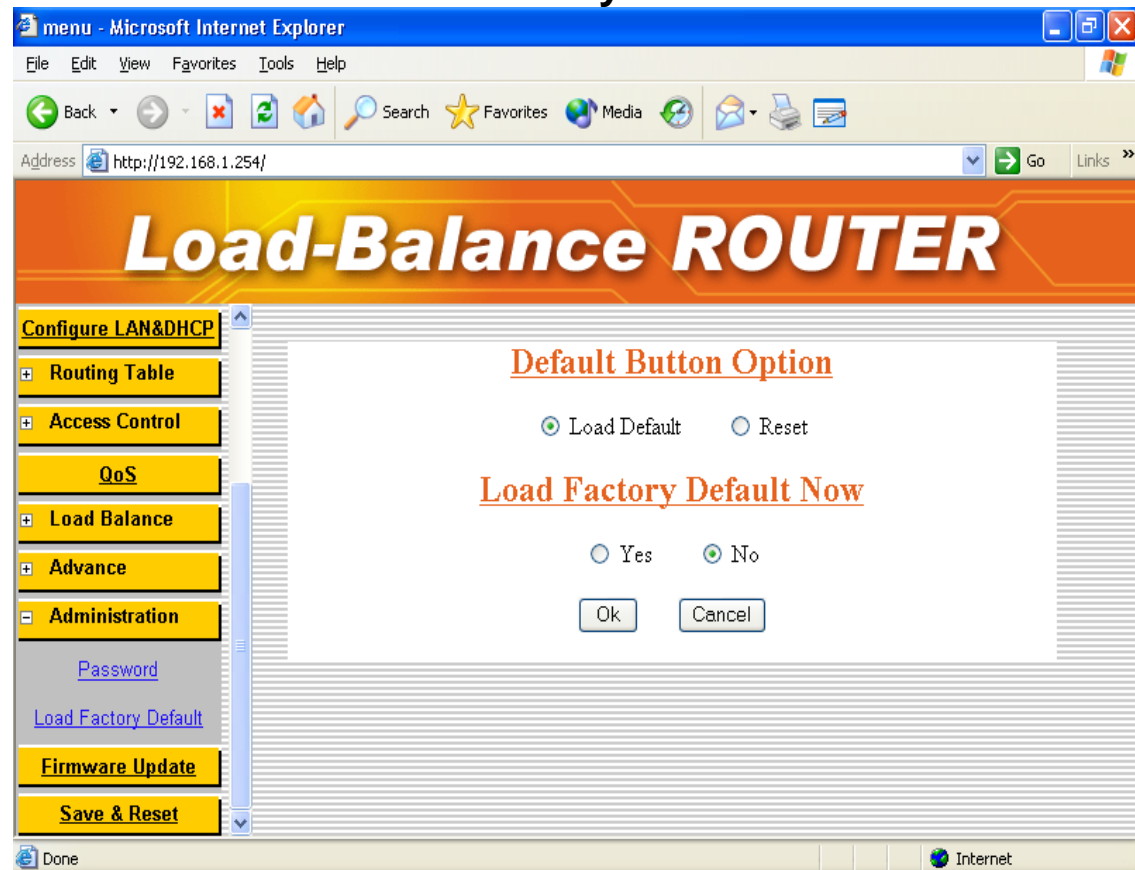
#### RESET BUTTO OPTION

- ◆ Load Default : **factory default value** will be use after re-boot
- ◆ Reset : **latest configuration file** will be use after re-boot

#### LOAD FACTORY DEFAULT

Using software reset function to load factory default value immediately

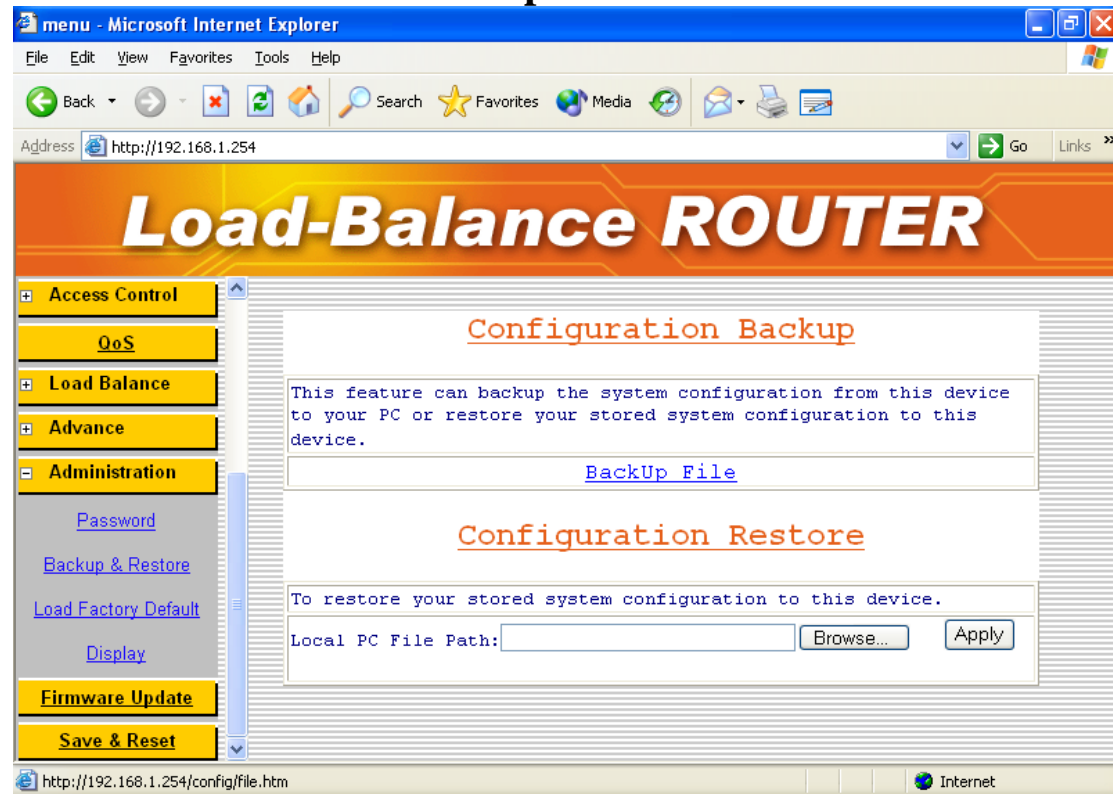
### Load Factory Default



### 5.1.4 Back Up & Restore

Use **Back Up & Restore** function to save all the settings parameter to PC for safety issue, in order to avoid all parameter lose when system crush..

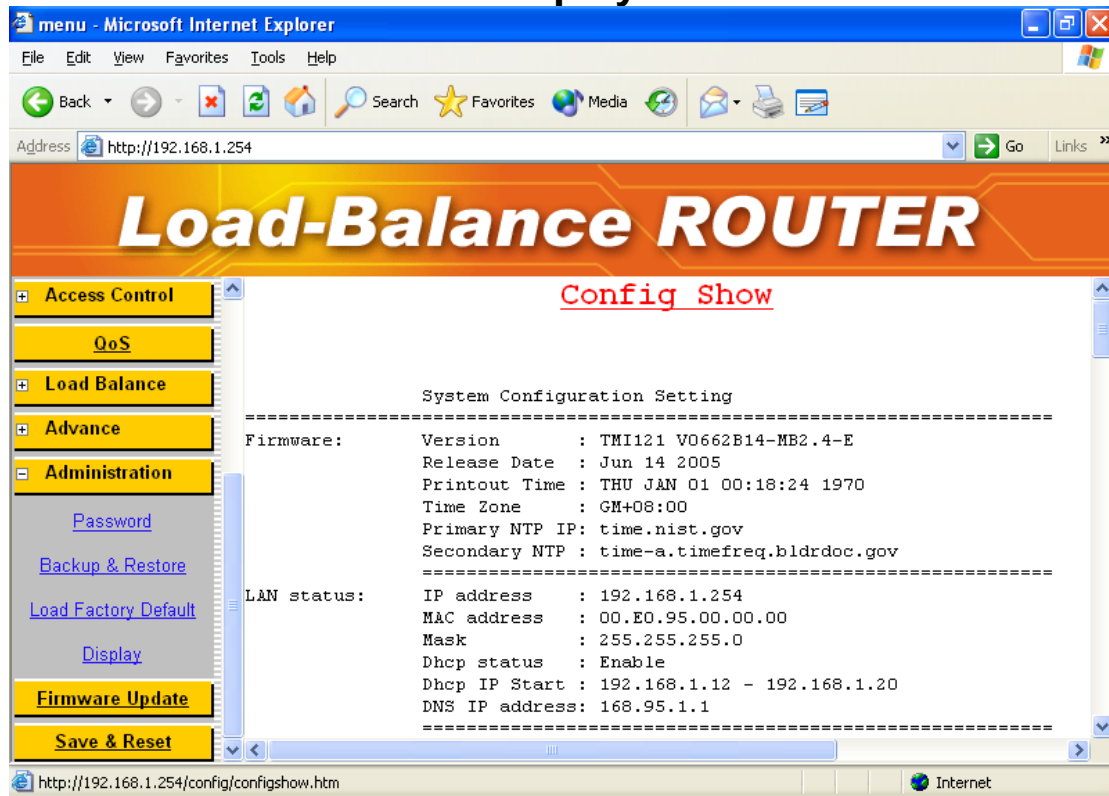
## Back Up & Restore



### 5.1.5 Display

You can this function to check all the parameter setting in this router, in order to save time to check every display.

## Display



## 5.2 Work Mode

In order to meet different application usage, you can configure this router into 3 different working mode.

- . Gateway mode
- . Router mode
- . Basic NAT mode

Each working mode include different features

Function Mode	LAN to WAN Throughput	NAT Function	DMZ, Dos Virtual Ser IP Filtering	IP Domain	PPPoE Dial up
Gateway Mode	Good	Yes	Yes	Legal To Illegal	Yes
Router Mode	Best	No	No.... (1)	Legal To Legal (4)	No
Basic NAT Mode (2)	Good	Yes	Yes...(3)	Legal To Illegal	Yes

(1) All NAT related function will be disable

(2) The purpose for this mode is to have high through-put and NAT function both

(3) Simple NAT function available

(4) Act like a multi-LAN port router

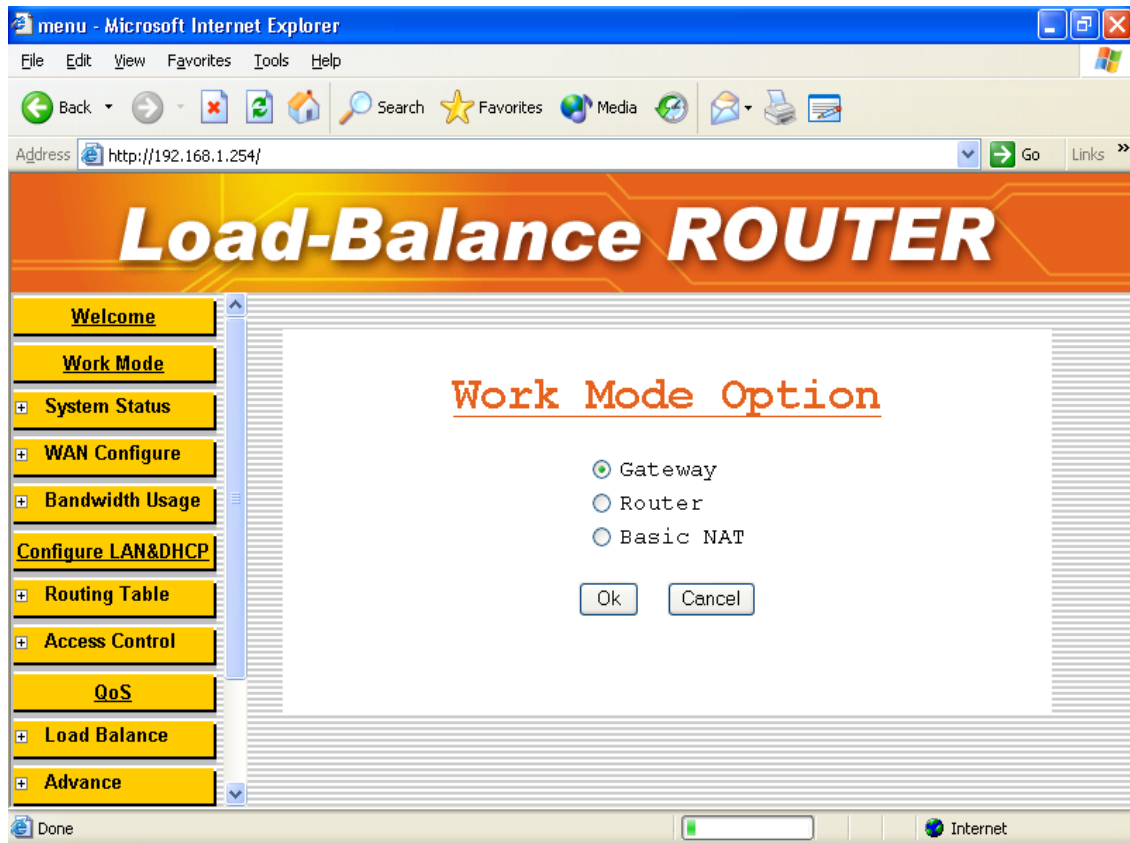
Working Mode / Function List

Function Mode	Gateway	Router	Basic NAT
PPPoE/ Dial Up DSL Type	V		V
Local IP Filtering	V		
Remote IP Filtering	V		
Dos Defense	V		
Virtual Server	V		V
Remote Configure	V	V	V
DMZ Host	V		V
Multi-NAT	V		V
Load Balance	V		V
Dynamic DNS	V		V
Mail Alert	V		V
Time Zone	V	V	V
System Log	V	V	V
Mac Address Clone	V	V	V



Configure Proxy	V		V
Routing protocol	V	V	V
DOD (PPPoE)	V		V
IP Binding	V		V
Bandwidth Usage Control	V		V
QoS	V		V

## WORK MODE



## 5.3 System Status

### 5.3.1 Link Status

You can get the following information in Link Status window

- **LAN Status,**
- **WAN Status,**
- **Firmware Version**
- **DHCP TABLE**

**LAN Status:** Shows the information of **MAC Address**, **IP Address**, **Subnet Mask** and **DHCP Status** (Enable/Disable).

**WAN Status:** Shows the information of **MAC Address**, **IP Address**, and **Subnet Mask** on each or all **WAN** ports

**Firmware version:** version of software and its released date.

**DHCP TABLE:** Shows the information of **MAC Address** and **IP Address**.

### SYSTEM STATUS - Link Status (1)

**Load-Balance ROUTER**

**LINK STATUS**

**LAN Status**

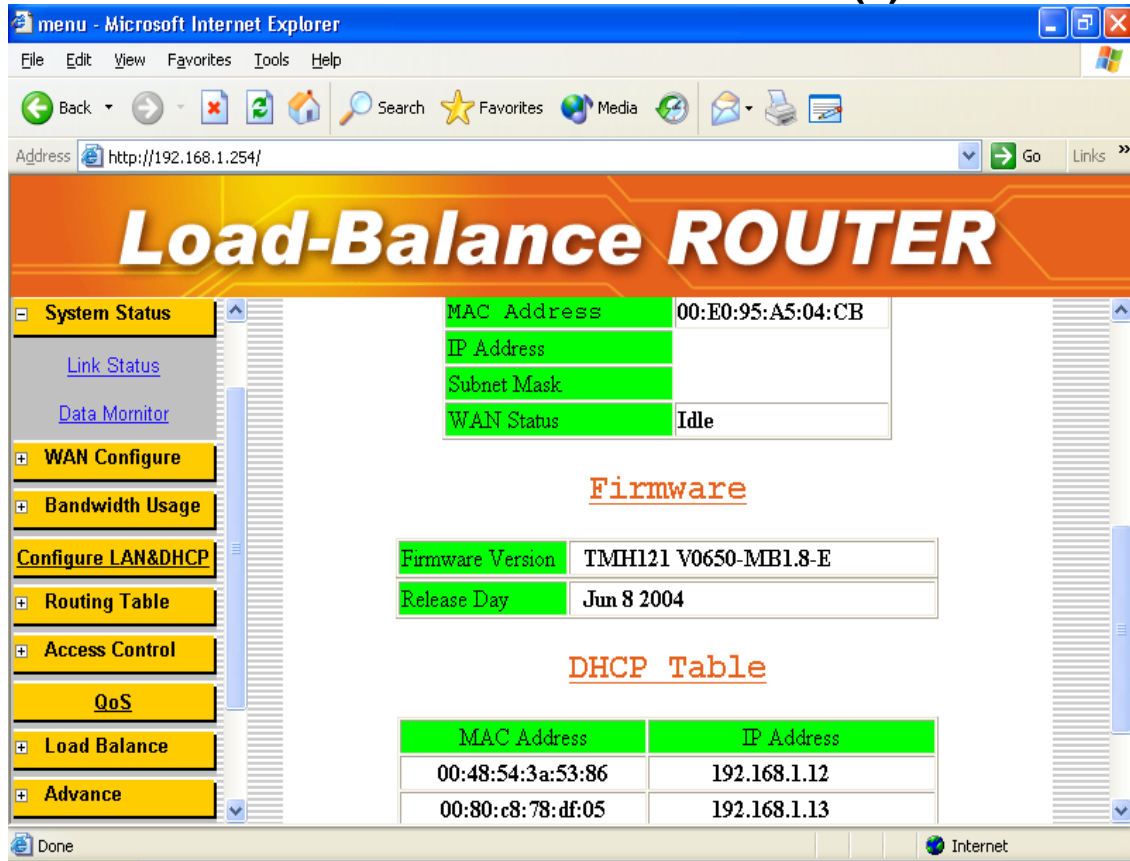
IP Address	192.168.1.254
MAC Address	00:E0:95:A5:04:CA
Subnet Mask	255.255.255.0
DHCP	Enable

**WAN Status**

WAN1

MAC Address	00:E0:95:A5:04:CB
-------------	-------------------

## SYSTEM STATUS - Link Status (2)



### 5.3.2 Data Monitor

Differ with Link Status window, Data Monitor window provide detail packet transfer status, it include 2 kinds of data  
Real Time Data happen in each WAN port

#### Current Session

TCP Session:

UDP Session:

ICMP Session:

Total Session:

#### Current Bandwidth

Download Speed:

Upload Speed:

#### Accumulated packet happen in each WAN port

#### Data Counter

Usage: % of total packet send through each WAN port

Example: WAN1 usage% =  $\frac{\text{WAN1 total packets}}{(\text{WAN1} + \text{WAN2}) \text{ total packets}}$  %

Byte Transmit: .....remark (A)

Byte Receive: .....remark (A)

Total Bytes: Total packets transfer by each WAN port .....remark (A)

Remark (A): Packet starts accumulate from.

- \* Router power on
- \* Click "clear counter"
- \* Counter reach upper limit number (4294967K)  
will reset from 0 automatically.

## SYSTEM STATUS - Data Monitor (1)

The screenshot shows a web browser window titled "menu - Microsoft Internet Explorer" with the address bar displaying "http://192.168.1.254/". The main content area features a large orange banner with the text "Load-Balance ROUTER". Below the banner, a sidebar on the left contains a menu with the following items: "System Status" (selected), "Link Status", "Data Monitor", "WAN Configure", "Bandwidth Usage", "Configure LAN&DHCP", "Routing Table", "Access Control", "QoS", "Load Balance", and "Advance". The main content area displays the "Data Monitor" section, which includes three tables: "Current Session", "Current Bandwidth", and "Data Counter".

Current Session		
	WAN1	WAN2
TCP Session	0	0
UDP Session	0	0
ICMP Session	0	0
Total Session	0	0

Current Bandwidth		
	WAN1	WAN2
Download Speed (byte/sec)	0	0
Upload Speed (byte/sec)	0	0

Data Counter		
	WAN1	WAN2
Usage (%)	0	0

## SYSTEM STATUS - Data Monitor (2)

The screenshot shows a web browser window titled "menu - Microsoft Internet Explorer" with the address bar displaying "http://192.168.1.254/". The main content area features a large orange banner with the text "Load-Balance ROUTER". Below the banner, there is a sidebar on the left with a menu of options: "System Status" (selected), "Link Status", "Data Monitor", "WAN Configure", "Bandwidth Usage", "Configure LAN&DHCP", "Routing Table", "Access Control", "QoS", "Load Balance", and "Advance". The main content area displays the "System Status" page, which includes a table of session statistics and a "Data Counter" section. The session statistics table shows UDP Session, ICMP Session, and Total Session, all with values of 0. The "Data Counter" section shows Usage (%), Byte Received (Kbytes), Byte Transmitted (Kbytes), and Total Bytes (Kbytes), all with values of 0. Below the table, there are three buttons: "NAT Table", "Refresh", and "Clear Counter".

Current Bandwidth		
	WAN1	WAN2
Download Speed (byte/sec)	0	0
Upload Speed (byte/sec)	0	0

Data Counter		
	WAN1	WAN2
Usage (%)	0	0
Byte Received (Kbytes)	0	0
Byte Transmitted (Kbytes)	0	0
Total Bytes (Kbytes)	0	0

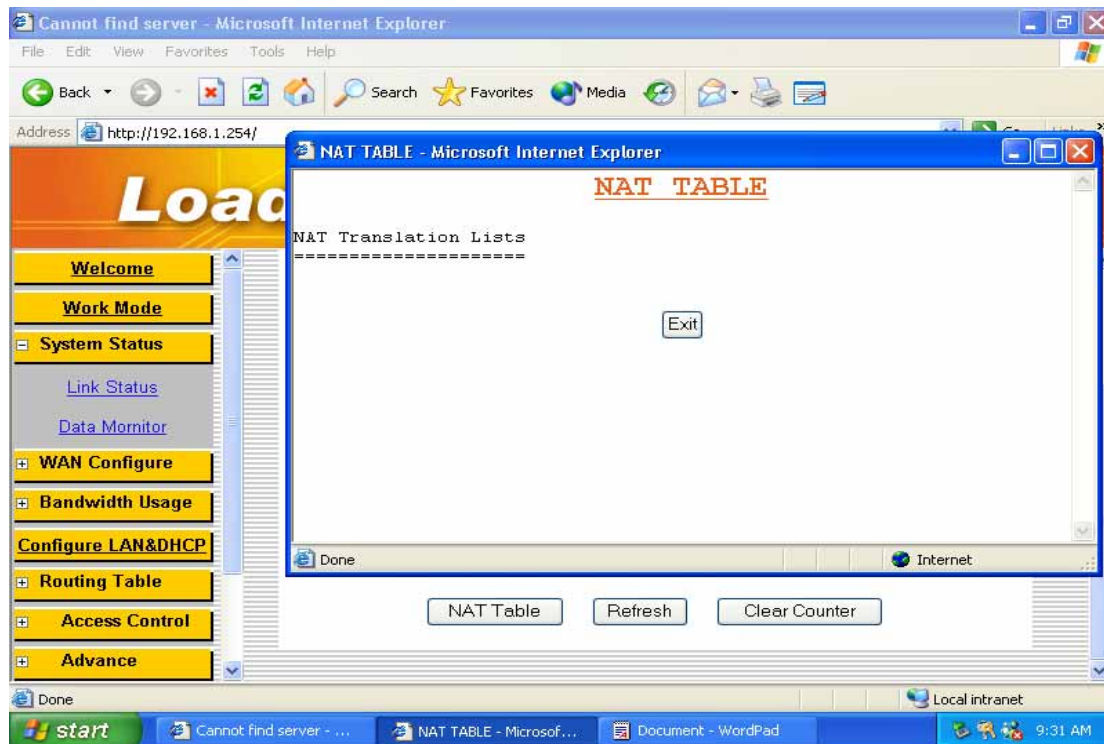
NAT Table   Refresh   Clear Counter

**NAT Table:** list current user detail NAT data.

**Refresh:** update data monitor table to display newest data

**Clear Counter:** reset **Data Counter** data to 0, re-start accumulate.

## SYSTEM STATUS – Data Monitor – NAT Table



### 5.4 WAN Configuration

#### ***-Configure WAN1/WAN2/WAN3/WAN4***

There are several **WAN** function can be made in this display, you can configure functions to each WAN port separately.

Connect to

- Internet:** WAN port is connect to Internet through ADSL/Cable modem
- Intranet:** WAN port is connect to another router LAN port, work together with “Static Route” function, can restrict specific IP packet to a dedicate route path.

#### **Healthy Check**

- Enable:** Router will check ADSL link automatically to check whether link alive or not ,if link fail, the Router will switch packet to another exist link( except TCP packet), the router will switch back to ADSL link again after router check ADSL line link again

Router provide 3 method to check ADSL link, you can choose it with each method or both

- Ping IP : to test IP in Internet
- DNS : test DNS in Internet
- Time Server

Suggest to select at least 2 method to check ADSL link, in order to avoid router making wrong action due to Internet Server disbaled.

**-Disable:** no **Healthy Check** function,  
if without "Time Server" exist, this function will disable automatically

Healthy Check can be set up to test 3 different destination IP, in order to avoid  
Wrong operation. ( in case destination server fail)

## **WAN TYPE**

Three kinds of **WAN** types to let you select on each **WAN** port:

### **1. [Dynamic IP]**

#### **. connect to CABLE MODEM.**

Obtain an IP address from ISP automatically.  
Usually it's used to connect CABLE modem. You won't need to assign IP Address, the Broadband Router will get the IP address for you automatically.

### **2. [PPPoE] (Gateway / Basic NAT Mode only)**

#### **. connect to Dial Up DSL**

Some ISPs require use of PPPoE to connect to their service.  
Connect to ISP via dial-up connecting, ISP will assign a legal IP to you after the user Id and password had been passed when the connection is made (The user Id and password here are provided by your ISP.)

### **3. [Static IP]**

#### **. connect to Leased DSL**

ISP assigns you a static IP address.  
When used the leased line of ADSL. ISP will provide you the relative IP, Subnet Mask, Gateway and DNS. You need to indicate the static IP manually.

## **SCHEDULE**

This function allow you to control each WAN port link up/down time by daily/weekly

**Start Time** (hh: mm)

**End Time**( hh: mm)

Using 00 ~23 to indicate Hours.

Example 17:00 means 05:00 PM

**Weekly:** choose by day

**Note:** When enable **SCHEDULE** function, the Line will up/down following the timer set, no matter **DOD** function is enable or not.

**WAN SPEED:** you need to enter speed of each WAN port (K bps)

Otherwise ROUTER **will not work properly** in

- Load Balance: Traffic Mode
- Bandwidth Usage Control

## **WAN Link Mode:**

You can choose WAN port work mode with ADSL modem  
Auto Sense  
10Mbps Half Duplex

10Mbps Full Duplex  
100Mbps Half Duplex  
100Mbps Full Duplex

## WAN CONFIGURE (1)– WAN1

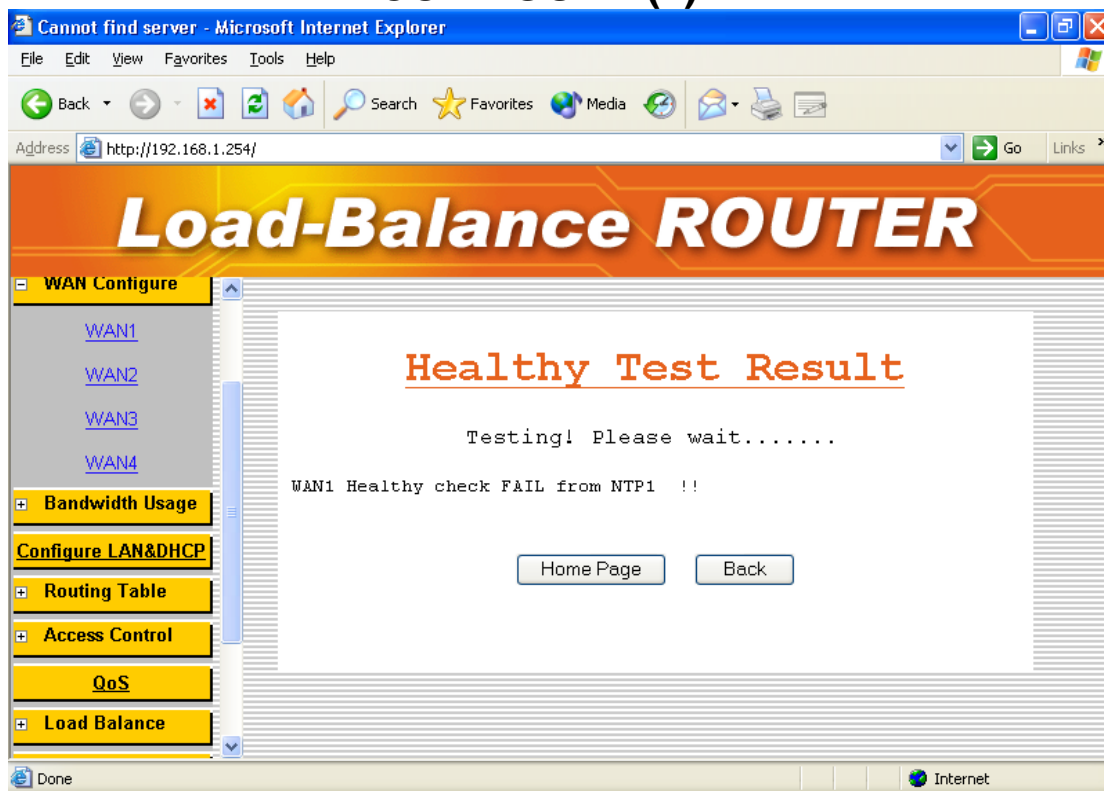
The screenshot shows a Microsoft Internet Explorer browser window with the address bar displaying `http://192.168.1.254/`. The page title is "Cannot find server - Microsoft Internet Explorer". The main content area has a large orange banner with the text "Load-Balance ROUTER". Below the banner, there is a sidebar on the left with a "WAN Configure" section containing links for WAN1, WAN2, WAN3, and WAN4. Below these links are several yellow buttons: "Bandwidth Usage", "Configure LAN&DHCP", "Routing Table", "Access Control", "QoS", and "Load Balance". The main configuration area is titled "Configure WAN1 Port". It contains the following options:

- Connect to:** ☒ Internet ☐ Intranet
- Healthy Check:** ☒ Enable ☐ Disable
- Ping IP:** ☐ [text input] [Test]
- DNS:** ☐ [text input] [Test]
- Time Server:** ☐ [text input] [Test]
- WAN Type:** ☒ Dynamic IP ☐ PPPoE

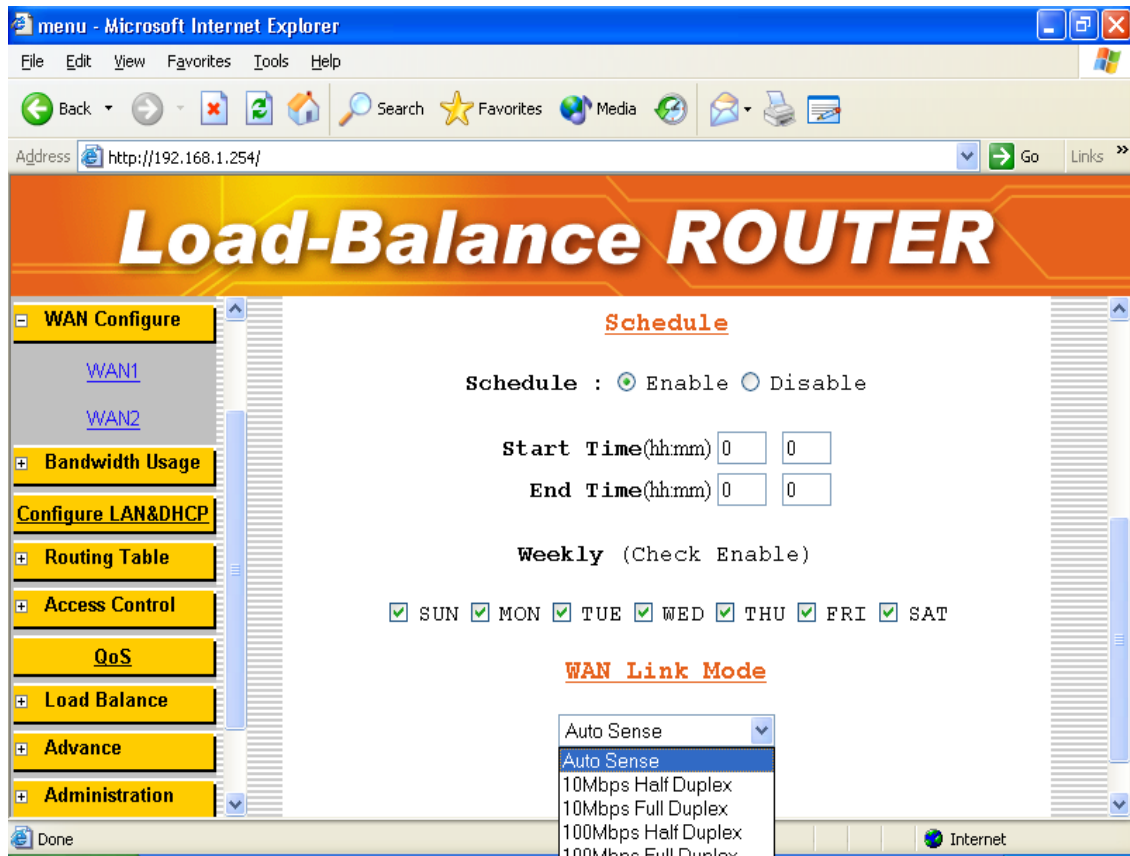
The status bar at the bottom shows "Done" and "Internet".



## WAN CONFIGURE (2)– WAN1



## WAN CONFIGURE - SCHEDULE



### 5.4.1 [Dynamic IP]

connect to CABLE MODEM

#### Gateway / Basic Mode:

When choose Dynamic IP, you only need to save this selection

When finish setting all parameter, reboot router.

#### Router Mode:

For Intranet use only, Broadband Router can obtain IP(s) from DHCP server automatically.

### 5.4.2 PPPoE/Dial Up DSL Type

(Gateway / Basic NAT Mode only)

Select [PPPoE /Dial Up DSL] and you will need to enter the ID and Password. Sometimes you also need to input the Service Name if ISP requires for it. Max Idle Time is using to disconnect the ADSL connection automatically after the idle period you define. The unit is minute and the default is 0. This default value let Broadband Router remain connecting all the time unless disconnected by user manually or ISP. If you define the period as 3, and the Broadband Router will auto disconnect after idling 3 minutes. Supposing that you don't have the Service Name, you may ask your ISP for it.

**Account:** User Name, provide by ISP, up to 40 characters can be enter.

**Password:** provide by ISP, up to 40 characters can be enter.

**Max Idle Time:** 0 =no check, check by minutes

Dial On Demand (DOD): auto connects function.

## CONFIGURE WAN - PPPOE

The screenshot shows a web browser window titled "menu - Microsoft Internet Explorer" with the address bar displaying "http://192.168.1.254/". The main content area has a large orange banner with the text "Load-Balance ROUTER". Below the banner is a sidebar menu with the following items: "WAN Configure", "WAN1", "WAN2", "Bandwidth Usage", "Configure LAN&DHCP", "Routing Table", "Access Control", "QoS", "Load Balance", "Advance", and "Administration". The "WAN Configure" section is expanded, showing "WAN1" and "WAN2" sub-items. The main content area is titled "Configure WAN1 Port" and contains the following configuration options:

- Connect to:** ☒ Internet ☐ Intranet
- Healthy Check:** ☐ Enable ☒ Disable
- WAN Type:**
  - ☐ Dynamic IP
  - ☒ PPPoE
- Account:** test
- Password:** [masked]
- Service Name:** host(default)
- Max Idle Time(/min):** 0
- Dial On Demand:** ☒ Enable

The status bar at the bottom shows "Done" and "Internet".

### 5.4.3 Static IP/Leased DSL Type

If you select **[Static IP/Leased DSL]** , you will need to input the IP Address, Subnet Mask, Primary DNS, Secondary DNS and Gateway provided by your ISP. The picture below is an example of static IP's settings.

## WAN CONFIGURE - STATIC IP

The screenshot shows a web browser window titled "menu - Microsoft Internet Explorer" with the address bar displaying "http://192.168.1.254/". The main content area is titled "Load-Balance ROUTER" in a large, stylized font. On the left side, there is a vertical navigation menu with the following items: "WAN Configure" (selected), "WAN1", "WAN2", "Bandwidth Usage", "Configure LAN&DHCP", "Routing Table", "Access Control", "QoS", "Load Balance", "Advance", and "Administration". The main configuration area is titled "WAN Type" and contains three radio button options: "Dynamic IP", "PPPoE", and "Static IP" (which is selected). Below these options, there are input fields for "IP Address", "Subnet Mask", "Primary DNS", "Secondary DNS", and "Gateway". The "IP Address" field is filled with "192", "168", "11", and "100". The "Subnet Mask" field is filled with "255", "255", "255", and "0". The "Primary DNS" field is filled with "168", "95", "1", and "3". The "Secondary DNS" field is empty. The "Gateway" field is filled with "192", "168", "11", and "254". Below the "WAN Type" section, there is a "Schedule" section with a "Schedule" label and two radio button options: "Enable" and "Disable" (which is selected).

**WAN Type**

☐ Dynamic IP  
☐ PPPoE  
☒ Static IP

IP Address : 192 . 168 . 11 . 100  
Subnet Mask : 255 . 255 . 255 . 0  
Primary DNS : 168 . 95 . 1 . 3  
Secondary DNS : . . . .  
Gateway : 192 . 168 . 11 . 254

**Schedule**

Schedule : ☐ Enable ☒ Disable

## 5.5 Bandwidth Usage Control

This is a very useful function, it can let you to control WAN port bandwidth usage by each protocol. Like FTP

When someone use FTP to transfer file, it will occupied

Heavy bandwidth, by using this function, you can limit

Dedicated application bandwidth

### For example:

In following display. FTP, HTTP & Mail bandwidth will be limit in certain

Percentage. This router provide 3 most often use protocol in the table,

Just fill in port number and % usage for each application

Protocol ... name of protocol data packet will be limit.

Port ... protocol port number

Usage: % of WAN speed can be use.

protocol % usage cannot exceed 100% for each WAN port.

Router provides another 4-user self-define port number for easy use ,  
just fill in port number for each protocol

## BANDWIDTH USAGE CONTROL (1)

The screenshot shows a web browser window titled 'menu - Microsoft Internet Explorer' with the address bar displaying 'http://192.168.1.254/'. The main content area is titled 'Load-Balance ROUTER' and features a sidebar menu on the left with options: WAN Configure, Bandwidth Usage (selected), WAN1, WAN2, Configure LAN&DHCP, Routing Table, Access Control, QoS, Load Balance, Advance, and Administration. The main panel is divided into two sections. The top section, 'WAN Speed', shows 'WAN1' with 'Download(kbps): 1000' and 'Upload(kbps): 512'. The bottom section, 'Bandwidth Usage Control', also for 'WAN1', contains a table with columns 'Protocol', 'Port', and 'Usage'.

Protocol	Port	Usage
<input checked="" type="checkbox"/> HTTP	80	15 %
<input checked="" type="checkbox"/> POP3	110	15 %
<input checked="" type="checkbox"/> SMTP	25	10 %
<input checked="" type="checkbox"/> FTP	21	5 %

## BANDWIDTH USAGE CONTROL (2)

The screenshot shows the 'Load-Balance ROUTER' web interface in Microsoft Internet Explorer. The address bar shows 'http://192.168.1.254/'. The left sidebar contains a menu with options: WAN Configure, Bandwidth Usage (selected), WAN1, WAN2, Configure LAN&DHCP, Routing Table, Access Control, QoS, Load Balance, Advance, and Administration. The main content area displays a table for bandwidth usage control.

Protocol	Port	Usage
<input checked="" type="checkbox"/> HTTP	80	15 %
<input checked="" type="checkbox"/> POP3	110	15 %
<input checked="" type="checkbox"/> SMTP	25	10 %
<input checked="" type="checkbox"/> FTP	21	5 %
<input checked="" type="checkbox"/>	23	20 %
<input checked="" type="checkbox"/>	1000	5 %
<input type="checkbox"/>		%
<input type="checkbox"/>		%

At the bottom of the table are 'Ok' and 'Cancel' buttons.

## BANDWIDTH USAGE CONTROL (3)

The screenshot shows the 'Load-Balance ROUTER' web interface in Microsoft Internet Explorer. The address bar shows 'http://192.168.1.254/'. The left sidebar contains a menu with options: Work Mode, System Status, WAN Configure, Bandwidth Usage (selected), WAN1, WAN2, Configure LAN&DHCP, Routing Table, Access Control, Advance, and Administration. The main content area displays the 'WAN Speed' configuration for WAN2.

**WAN Speed**

WAN2

Download(kbps) : 2000 Upload(kbps) : 64

**Bandwidth Usage Control**

WAN2

Protocol	Port	Usage
<input type="checkbox"/> HTTP	80	10 %
<input type="checkbox"/> POP3	110	15 %
<input type="checkbox"/> SMTP	25	5 %

The Windows taskbar at the bottom shows the start button, Command Prompt, Document - Wor..., menu - Microsoft..., and Removable Disk (...). The system clock shows 3:11 PM.

## 5.6 Configure LAN&DHCP

This function configures the LAN ports

- IP address
- Subnet Mask
- DHCP.

You can choose using DHCP server or not, the Dynamic Host Configuration Protocol (DHCP) allows the Broadband Router to dynamically assign IP addresses to network devices. Dynamic IP assignment alleviates the need for the network administrator to maintain and monitor IP address assignments and simplifies IP use because the IP addresses are automatically and dynamically assigned when a station powers-on. You will need to indicate the range of DHCP server and DNS address if you enable DHCP server function.

You can also reserve some IP's to specific computers. You need to enter the name (MAC address) of the network card installed in your computer to assign a particular IP to it. Enter the relative values and then click **ADD**.

When enable DHCP Server in "From", "TO" field, you can reserve up to **253** IP address to DHCP server.

Fill in local DNS Server IP address in "**DNS Address**" field, you can ask your local ISP to provide this information.

### CONFIGURE LAN & DHCP (1)

menu - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Media Print Mail Print Mail Print Mail

Address <http://192.168.1.254/> Go Links >>

# Load-Balance ROUTER

- WAN Configure
- Bandwidth Usage
- Configure LAN&DHCP**
- Routing Table
- Access Control
- QoS
- Load Balance
- Advance
- Administration
- Firmware Update
- Save & Reset

## Configure LAN

IP Address :

Subnet Mask :

## Configure DHCP

DHCP Server : ☒ Enable ☐ Disable

DHCP Server Range :

From :

To :

DNS Address :

Internet

## CONFIGURE LAN & DHCP (2)

menu - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Media Print Mail

Address http://192.168.1.254/ Go Links >>

# Load-Balance ROUTER

- WAN Configure
- Bandwidth Usage
- Configure LAN&DHCP**
- Routing Table
- Access Control
- QoS
- Load Balance
- Advance
- Administration
- Firmware Update
- Save & Reset

DHCP Server : ☒ Enable ☐ Disable

DHCP Server Range :

From :

To :

DNS Address :

### Reservations IP

MAC Address	IP Address	Delete	Modify
-------------	------------	--------	--------

Internet



## CONFIGURE LAN & DHCP (3)

The screenshot shows the 'Load-Balance ROUTER' web interface in Microsoft Internet Explorer. The address bar shows 'http://192.168.1.254/'. The left sidebar contains a menu with options: Work Mode, System Status, WAN Configure, Bandwidth Usage, **Configure LAN&DHCP**, Routing Table, Access Control, Advance, Administration, Firmware Update, and Save & Reset. The main content area is titled 'Reservations IP' and displays a table of DHCP reservations. Above the table, there are input fields for 'From' (192.168.1.12), 'To' (192.168.1.20), and 'DNS Address' (168.95.1.1). The table has four columns: MAC Address, IP Address, Delete, and Modify. It contains two entries. Below the table are 'Modify' and 'Add' buttons, and at the bottom, 'Ok' and 'Cancel' buttons.

MAC Address	IP Address	Delete	Modify
00.10.02.03.04.05	192.168.1.56	<input type="checkbox"/>	<input type="radio"/>
00.03.04.05.07.08	192.168.1.88	<input type="checkbox"/>	<input type="radio"/>

## CONFIGURE LAN & DHCP (4)

The screenshot shows the 'Load-Balance ROUTER' web interface in Microsoft Internet Explorer. The address bar shows 'http://192.168.1.254/'. The left sidebar is identical to the previous screenshot, with 'Configure LAN&DHCP' selected. The main content area is titled 'Modify Reserved IP Address'. It displays a form for editing a reservation. The 'MAC Address' field is split into six boxes containing '00', '10', '02', '03', '04', and '05'. The 'IP Address' field contains '192.168.1.56'. Below the form are 'Ok' and 'Cancel' buttons.

MAC Address	IP Address
00 10 02 03 04 05	192.168.1.56

## 5.7 Routing Table

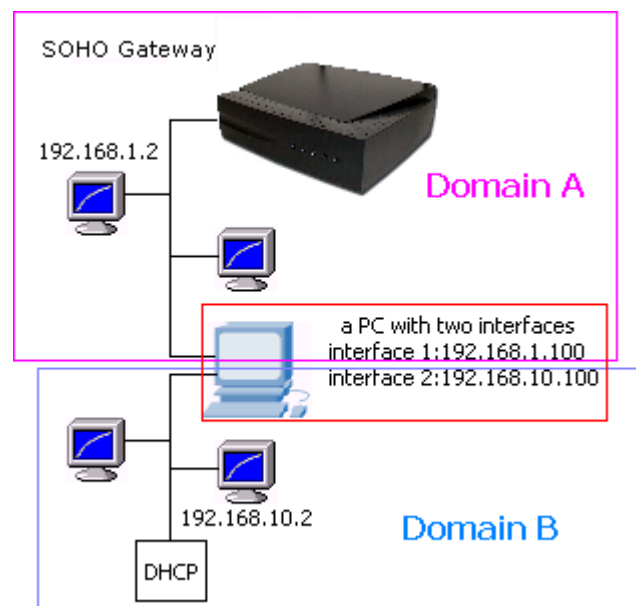
### 5.7.1 Configure

#### **Static Routing:**

This function allows manually defined by users as the only path to the destination. Users can configure the static routing path to Broadband Router.

#### **For example:**

There have one pc with two interfaces in this area, one interface is connected to Broadband Router (domain A), and the other connected to another Server (domain B). Users need to set the static routing path in Broadband Router to let it recognize that there is another domain in this area. These settings enable the packets from domain A reach the destination in domain B via the gateway configured in Broadband Router.



Gateway Mode

#### **Router mode:**

It will disable all the functions those are related to NAT, such as Virtual Server, DMZ, Multi-DMZ, IP Filter, DoS and so on

Router mode supports neither PPPoE nor Dial-up connection. It's only been used for the route between two domains. In other words, router mode supports the transmission of data between two different domains via WAN port. The Broadband Routers needs to use static routing or dynamic routing (RIP1/RIP2) to obtain routing table from each other. Thus, the PCs in domain A and PCs in domain B can access the data that are in another domain via the router mode.

## ROUTING TABLE – STATIC ROUTING

**Load-Balance ROUTER**

Static Routing

Item	Network	Netmask	Gateway	Enable
1	192.168.1.0	255.255.255.0	192.168.1.0.100	<input checked="" type="checkbox"/>
2				<input type="checkbox"/>
3				<input type="checkbox"/>
4				<input type="checkbox"/>
5				<input type="checkbox"/>

Dynamic Routing

Enable: ☐

Version: **RIP2**

### Router Mode

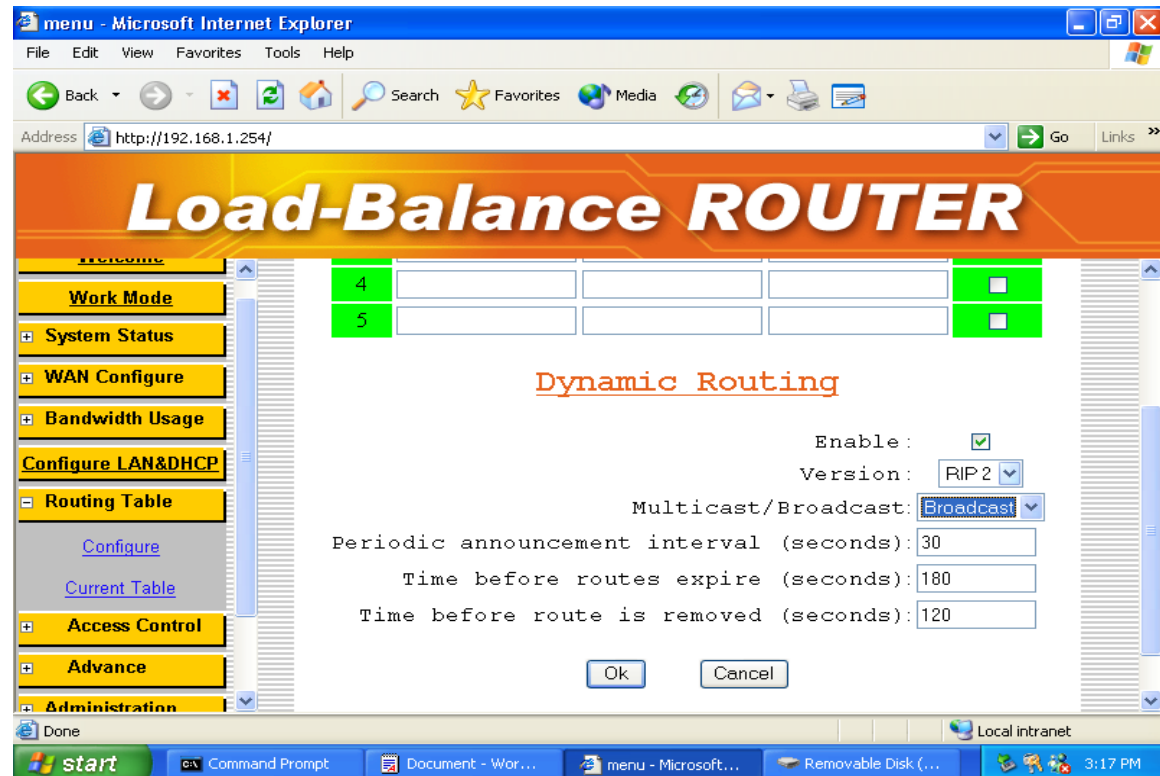
#### Basic NAT mode:

Similar to Gateway mode, the difference is that Basic NAT mode only has Basic NAT function. Once you select Basic NAT mode, all the additional function such as DoD (Dial on Demand), IP Filter, DoS and so on will be disabled. You may select Basic NAT mode to obtain higher speed otherwise you have to select Gateway mode to enable these functions.

## Dynamic Routing:

Dynamic Routing allows router learns of path to destination by receiving periodic updates from others. The protocol used in communication between routers is RIP 1/2 (Routing Information Protocol). RIP1 supports only broadcast mode while RIP2 supports broadcast and multicast mode.

## ROUTING TABLE - DYNAMIC ROUTING



menu - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Media

Address <http://192.168.1.254/> Go Links

# Load-Balance ROUTER

- Work Mode
- System Status
- WAN Configure
- Bandwidth Usage
- Configure LAN&DHCP
- Routing Table**
  - Configure
  - Current Table
- Access Control
- Advance
- Administration

	IP Address	Mask	Next Hop
4			
5			

### Dynamic Routing

Enable: ☒

Version:

Multicast/Broadcast:

Periodic announcement interval (seconds):

Time before routes expire (seconds):

Time before route is removed (seconds):

Ok Cancel

Done Local intranet

start Command Prompt Document - Wor... menu - Microsoft... Removable Disk (...) 3:17 PM

### 5.7.2 Current Routing Table

This display shows the valid routing paths in Broadband Router. Users can view the information about current routing paths.

## ROUTING TABLE – CURRENT ROUTING TABLE

The screenshot shows a web browser window titled "menu - Microsoft Internet Explorer" with the address bar displaying "http://192.168.1.254/". The main content area features a large orange banner with the text "Load-Balance ROUTER". Below the banner is a sidebar menu with various configuration options: "Work Mode", "System Status", "WAN Configure", "Bandwidth Usage", "Configure LAN&DHCP", "Routing Table" (selected), "Access Control", "Advance", and "Administration". The "Routing Table" section is expanded, showing a "Current Table" link. The main content area displays the "Current Routing Table" with the following data:

Network	Netmask	Gateway
192.168.1.0	255.255.255.0	192.168.1.254

## 5.8 Access Control

### 5.8.1 Local IP Filtering

#### - Gateway Mode only

Broadband Router allows you to do accessed restriction of block/allow outgoing IP packets by protocol (port number).

You may restrict some IP's only to perform limited protocols or allow them to execute partial protocols. And the first thing you have to know is the port numbers and their usages.

Local IP Filtering allows you set ten items and item 1 has the highest priority. In principle, the same IP should not list in different items. If IP settings conflict occurs, item with higher priority would be the obeyed rules.

You can reserve dedicate IP address to dedicated user from "**Configure LAN**" display -> "**Reservations IP**" function, by using this function, user can have dedicated IP address match to their computer NIC MAC address.

There are ten items in this function. You can allow or restrict specific IP(s) to access some port numbers.

**Example 1**, if you restrict the PC of IP 192.168.1.13-192.168.1.15 to access HTTP, the settings are:

Item 1: Enable  
 Filter entry: Block  
 Port Number: 80  
 IP address: 192.168.1.13-192.168.1.15

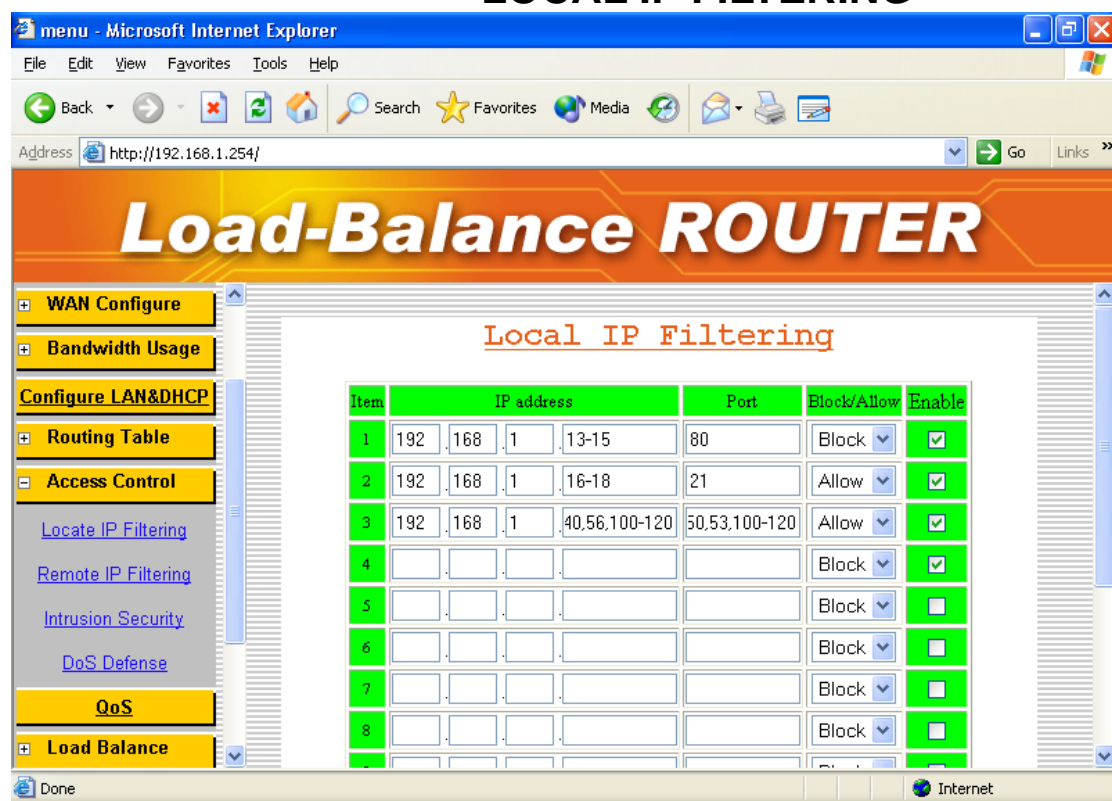
**Example 2**, if you allow the PC of IP 192.168.1.16-192.168.1.18 to access FTP only, the settings are:

Item 2: Enable  
 Filter entry: Allow  
 Port Number: 21  
 IP address: 192.168.1.16-192.168.1.18

**Example 3**, if you allow the PC of IP 192.168.1.40, 192.168.1.56, 192.168.1.100-192.168.1.120 to access port 50, port 53, port 100-120 only, the settings are:

Item 3: Enable  
 Filter entry: Allow  
 Port Number: 50, 53, 100-120  
 IP address: 192.168.1.40, 192.168.1.56, 192.168.1.100-120

## LOCAL IP FILTERING



**Note:** Port and IP address can accept digits 0-9, “,” and “-“ only.

## Protocol Port No. List

Protocol	Service	Port no.	Protocol	Service	Port no.
TCP	FTP	21	TCP	LADP	389
TCP	SSH	22	TCP	HTTPS	443
TCP	TELNET	23	UDP	IKE	500
TCP	SMTP	25	TCP	RLOGIN	513
UDP	DNS	53	UDP	SYSLOG	514
UDP	TFTP	69	UDP	TALK	517,518
TCP	GOTHER	70	UDP	RIP	520
TCP	FINGER	79	TCP	AFPOWERTCP	548
TCP	HTTP	80	TCP	Net-Meeting	1503,1702
TCP	POP3	110	TCP	L2TP	1701
UDP	NFS	111	TCP	PPTP	1723
TCP	NNTP	119	TCP	AOL	5190~5194
UDP	NTP	123	UDP	PC Anywhere	5631~5632
TCP	IMAP	143	TCP	XWINDOW	6000-6063
UDP	SNMP	161	TCP	IRC	6660~6669
TCP	BGP	179	TCP	Real-Media	7070
TCP	WAIS	210	TCP		6000-6063

## 5.8.2 Remote IP Filtering

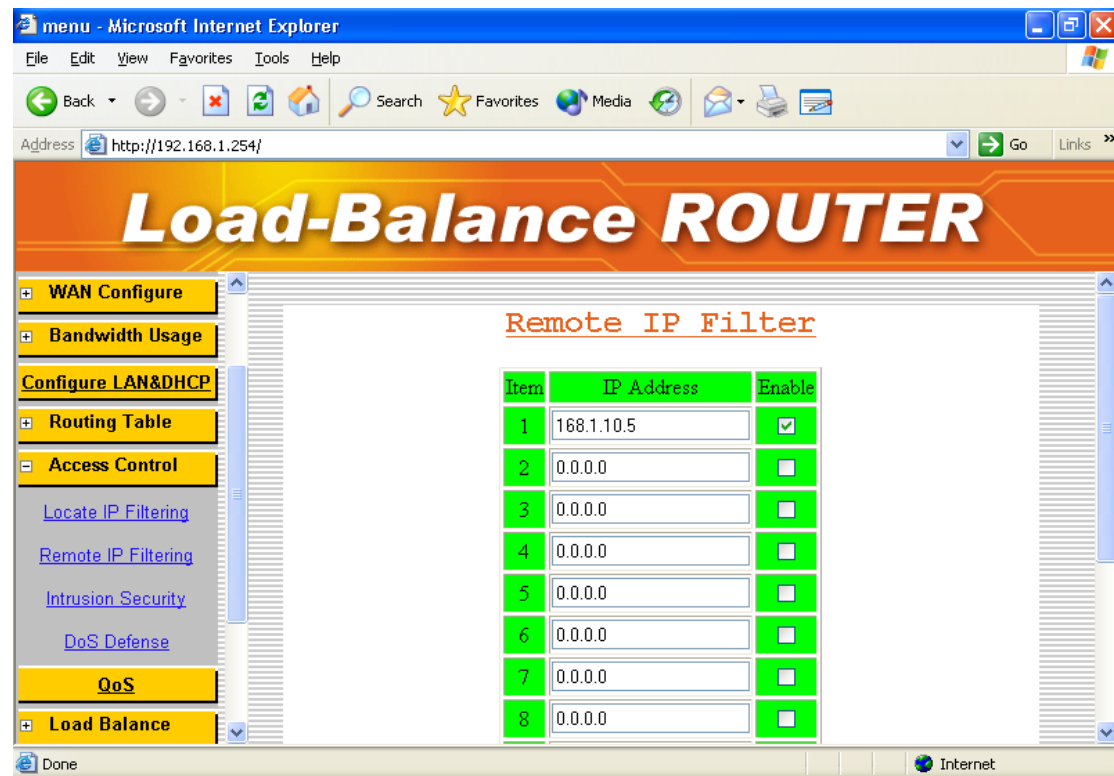
### - Gateway Mode only -

Broadband Router provides you to do accessed restriction for users. You may restrict some destination IP address that are not allow to reach

**IP Address:** destination IP address that prohibit users to reach

**Enable:** enable restrict function

## REMOTE IP FILTERING

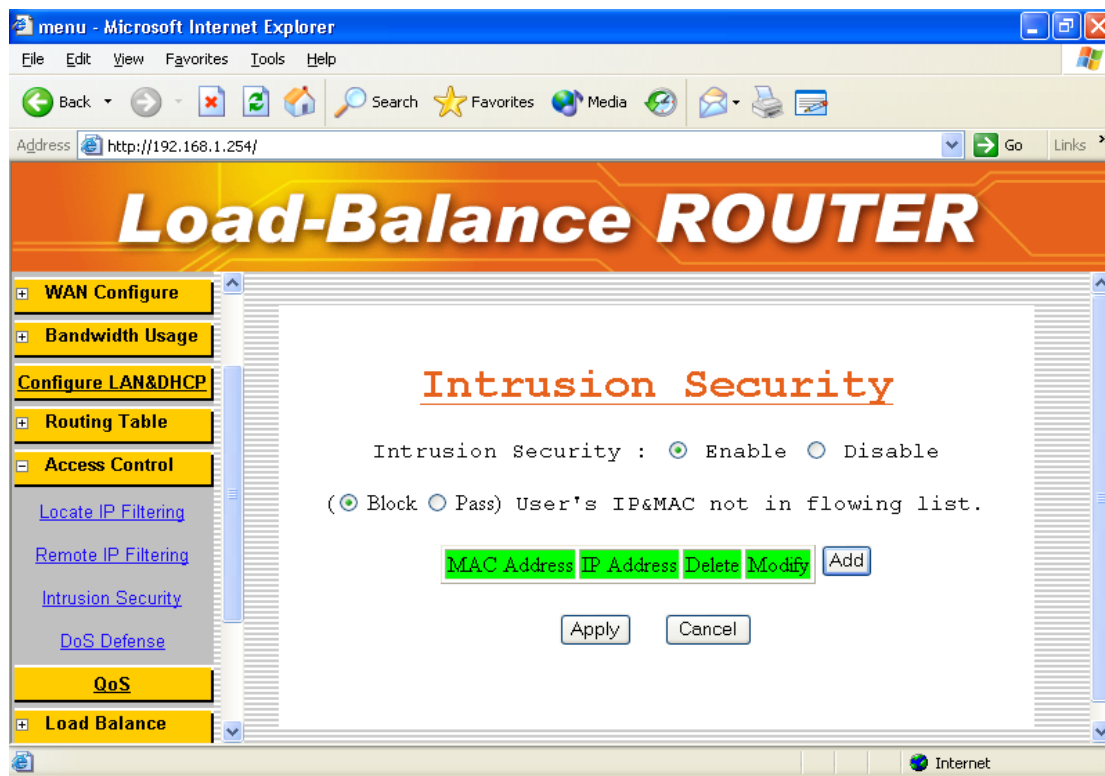




### 5.8.3 Intrusion Security

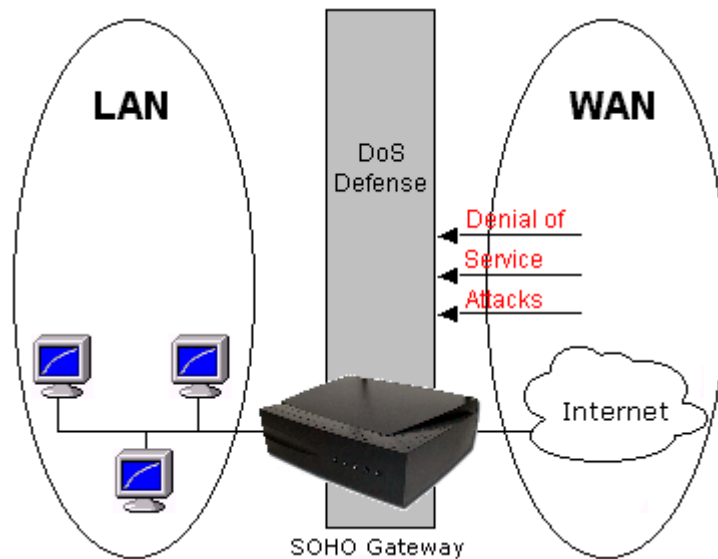
By set up this table, Router can be defined as “BLOCK” or “PASS” function following by the table content.

## Intrusion Security



### 5.8.4 DoS Defense

This Broadband Router also provides with DoS (Denial of Service Defense) function to protect your network servers, hosts, routers and other devices from the attacking of villain using mass data transmission. The default value in The display is the optimize parameter for Router.



## DOS DEFENSE(1)

menu - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Media Print Mail

Address <http://192.168.1.254/> Go Links >>

# Load-Balance ROUTER

WAN Configure

Bandwidth Usage

Configure LAN&DHCP

Routing Table

Access Control

[Locate IP Filtering](#)

[Remote IP Filtering](#)

[Intrusion Security](#)

[DoS Defense](#)

QoS

Load Balance

## DoS Defense

Function	Parameter	Lock Time	Enable
IP Fragments Checking			<input type="checkbox"/>
IP Address spoofing			<input type="checkbox"/>
Disable Ping(ICMP) respond	<input checked="" type="checkbox"/> LAN <input checked="" type="checkbox"/> WAN1 <input checked="" type="checkbox"/> WAN2		<input checked="" type="checkbox"/>
Oversized Ping	32 bytes		<input checked="" type="checkbox"/>
Drop IP Packet with Source Route Option			<input type="checkbox"/>
Port Scan	1000 ports/sec	5 min	<input checked="" type="checkbox"/>
TCP SYN Flooding (WAN)	1000 times/sec	5 min	<input checked="" type="checkbox"/>

Done Internet

Cannot find server - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Media Print Mail

Address http://192.168.1.254/ Go Links >>

# Load-Balance ROUTER

**Configure LAN&DHCP**

- Routing Table
- Access Control
  - Local IP Filtering
  - Remote IP Filtering
  - Intrusion Security
  - DoS Defense
- QoS
- Load Balance
- Advance
- Administration

## DoS Defense

Function	Parameter	Lock Time	Enable
IP Fragments Checking			<input type="checkbox"/>
IP Address spoofing			<input type="checkbox"/>
Disable Ping(ICMP) respond	<input checked="" type="checkbox"/> LAN <input checked="" type="checkbox"/> WAN1 <input checked="" type="checkbox"/> WAN2 <input checked="" type="checkbox"/> WAN3 <input checked="" type="checkbox"/> WAN4		<input checked="" type="checkbox"/>
Oversized Ping	32 bytes		<input checked="" type="checkbox"/>
Drop IP Packet with Source Route Option			<input type="checkbox"/>
Port Scan	1000 ports/sec	5 min	<input checked="" type="checkbox"/>
TCP SYN Flooding (WAN)	1000	5	<input checked="" type="checkbox"/>

Done Internet

\* Some virus are using "PING" command to attack network, this Router can be defined as accept or reject "PING" command from WAN or LAN.

# DOS DEFENSE

menu - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Media Print Mail

Address http://192.168.1.254/ Go Links >>

## Load-Balance ROUTER

WAN Configure

Bandwidth Usage

Configure LAN&DHCP

Routing Table

Access Control

[Locate IP Filtering](#)

[Remote IP Filtering](#)

[Intrusion Security](#)

[DoS Defense](#)

QoS

Load Balance

Oversized Ping	32	bytes		<input checked="" type="checkbox"/>
Drop IP Packet with Source Route Option				<input type="checkbox"/>
Port Scan	1000	ports/sec	5 min	<input checked="" type="checkbox"/>
TCP SYN Flooding (WAN)	1000	times/sec	5 min	<input checked="" type="checkbox"/>
TCP SYN Flooding (LAN)	1000	times/sec	5 min	<input checked="" type="checkbox"/>
ICMP Flooding (WAN)	1000	times/sec	5 min	<input checked="" type="checkbox"/>
ICMP Flooding (LAN)	1000	times/sec	5 min	<input checked="" type="checkbox"/>
UDP Flooding (WAN)	1000	times/sec	5 min	<input checked="" type="checkbox"/>
UDP Flooding (LAN)	1000	times/sec	5 min	<input checked="" type="checkbox"/>

Ok Cancel

Done Internet

<b>Function</b>	<b>Description</b>
IP Fragments Checking	Checking the IP fragments. When it finds someone from WAN side tries to attack your network using overlap IP fragments in a bad attention, this function will check over these packets and drop them.
IP Address spoofing	Finding out whether the source address(s) and destination address(s) are legal IP's or not. If they are illegal IP's or multicast addresses, this function will cast these packets away.
Oversized Ping	Dropping the packets of "ping" which exceed the size you set. The default value is 32 bytes.
Drop IP Packet with Source Route Option	Casing a packet away when it contains source route option(s) in its IP.
Port Scan	When an IP from Internet tries to scan the IP of Broadband Router up to 10000ports/sec (default value), this function will drop all the packets from this IP within 5 minutes (default value).
TCP SYN Flooding (WAN)	When a destination address and destination port of Broadband Router receives TCP SYN packet from WAN over 10000 times (default value) in one second, Broadband Router will close this address and port for 5 minutes (default value) temporarily.
TCP SYN Flooding (LAN)	When an IP in LAN of Broadband Router tries to send TCP SYN packet over 10000 times (default value) in one second, Broadband Router will close this source address for 5 minutes (default value) temporarily.
ICMP Flooding (WAN)	When a destination address of Broadband Router receives ICMP from WAN over 10000 times (default value) in one second, Broadband Router will close this address for 5 minutes (default value) temporarily.
ICMP Flooding (LAN)	When an IP in LAN of Broadband Router tries to send ICMP over 10000 times (default value) in one second, Broadband Router will close this source address for 5 minutes (default value) temporarily.
UDP Flooding (WAN)	When a destination address of Broadband Router receives UDP from WAN over 10000 times (default value) in one second, Broadband Router will close this address for 5 minutes (default value) temporarily.
UDP Flooding (LAN)	When an IP in LAN of Broadband Router tries to send UDP over 10000 times (default value) in one second, Broadband Router will close this source address for 5 minutes (default value) temporarily.

### 5.8.5 URL Filtering

Besides restrict users by local/destination IP, Broadband Router provides you to do accessed restriction for user by URL as well. You may restrict some URL address that are not allow to reach

**Keyword:** destination URL that prohibit users to reach

**Enable:** enable restrict function

## URL Filtering

The screenshot shows the configuration interface of a 'Load-Balance ROUTER' accessed via a web browser. The browser's address bar shows 'http://192.168.1.254'. The page has a yellow and orange header with the title 'Load-Balance ROUTER'. On the left is a navigation menu with options: 'Configure LAN&DHCP', 'Routing Table', 'Access Control' (selected), 'Local IP Filtering', 'Remote IP Filtering', 'Intrusion Security', 'DoS Defense', 'URL Filtering', 'QoS', 'Load Balance', and 'Advance'. The main content area is titled 'URL Filtering' and contains a checkbox 'Enable URL Filter On Http Port' with a value of '80'. Below this is a table with two columns: 'Item' and 'Keyword'.

Item	Keyword
1	
2	
3	
4	
5	
6	
7	

## 5.9 QoS

Important feature of this router, this function can let you to set up **USER BANDWIDTH** with Maximum & Minimum bandwidth value.

**Load-Balance ROUTER**

**Configure WAN Speed**

	Download(kbps)	UpLoad(kbps)
WAN 1	1000	512
WAN 2	1000	64

**IP MAX/MIN Limit**

IP	MAX/MIN	Down Rate	Up Rate	WAN Apply	En
192.168.1.15	MAX	128 kbits	64 kbits	<input checked="" type="checkbox"/> 1 <input checked="" type="checkbox"/> 2	<input checked="" type="checkbox"/>
	MIN	0 kbits	0 kbits	<input type="checkbox"/> 1 <input type="checkbox"/> 2	<input type="checkbox"/>
	MIN	0 kbits	0 kbits	<input type="checkbox"/> 1 <input type="checkbox"/> 2	<input type="checkbox"/>
	MIN	0 kbits	0 kbits	<input type="checkbox"/> 1 <input type="checkbox"/> 2	<input type="checkbox"/>

## Load Balance

### 5.10.1 Mode

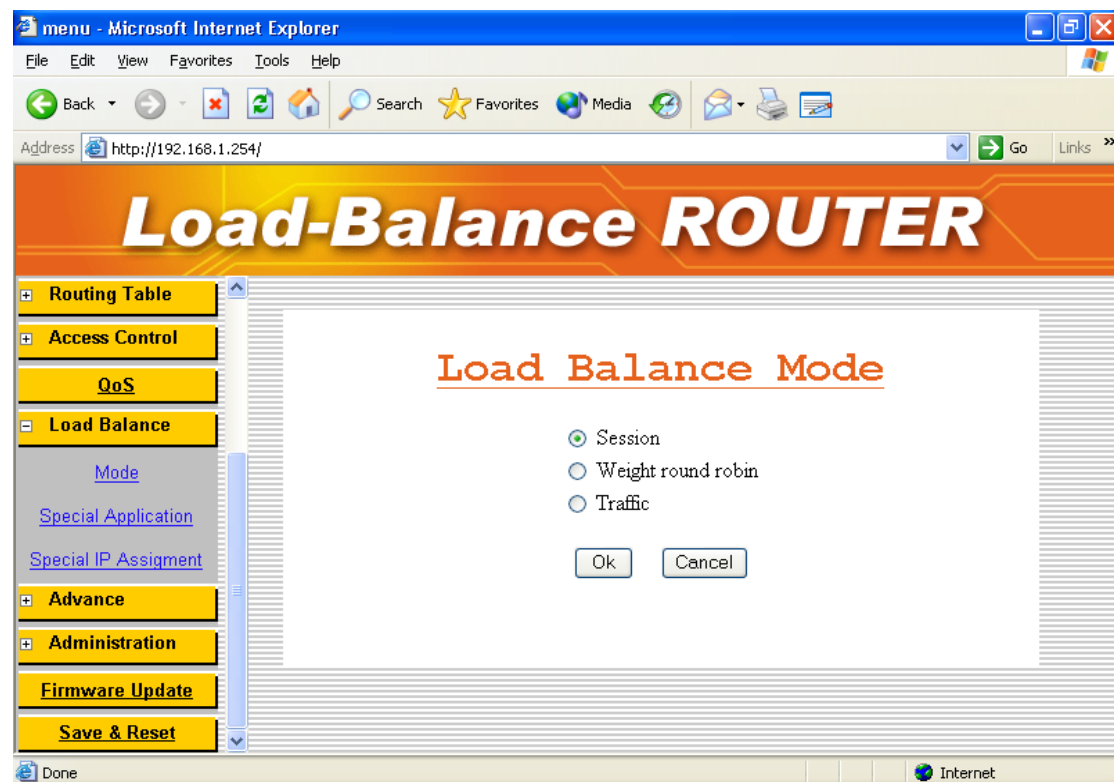
Broadband Router provides three load balance work modes:

<b>Session</b>	All the enabled WAN ports have the same (1:1) bandwidth rate.
<b>Weight round robin</b>	Configure the WAN ports bandwidth rate manually.
<b>Traffic</b>	Router will find the lowest loading WAN port to transmit and receive data automatically.

#### **Session mode:**

When choose this mode, the router will assign each coming session To each WAN port one by one, no matter how traffic loading on each WAN port.

## LOAD BALANCE



#### **Weight Round Robin mode:**

Configure the WAN ports bandwidth rate manually, means you can Distribute each coming session from users to each WAN port, following the Rate that you assign in each WAN port.

The session number in each WAN can be numbered from **1 to 100**, The suggest number is under 1 ~10. if rate is 1:1 for each WAN port , the router function will act like Session mode



## LOAD BALANCE

The screenshot shows a web browser window titled "menu - Microsoft Internet Explorer" with the address bar displaying "http://192.168.1.254/". The page has a blue header with the text "Load-Balance ROUTER". On the left side, there is a vertical menu with buttons for "Routing Table", "Access Control", "QoS", "Load Balance", "Mode", "Special Application", "Special IP Assignment", "Advance", "Administration", "Firmware Update", and "Save & Reset". The "Load Balance" button is highlighted. The main content area is titled "Load Balance Mode" and contains three radio buttons: "Session", "Weight round robin" (which is selected), and "Traffic". Below the "Weight round robin" radio button, there are two input fields: "WAN1 : 1" and "WAN2 : 4". At the bottom of the main content area, there are "Ok" and "Cancel" buttons.

### Traffic Mode:

Router will find the lowest loading WAN port to transmit and receive data automatically. you need to enter correct ADSL/CABLE WAN speed in here.

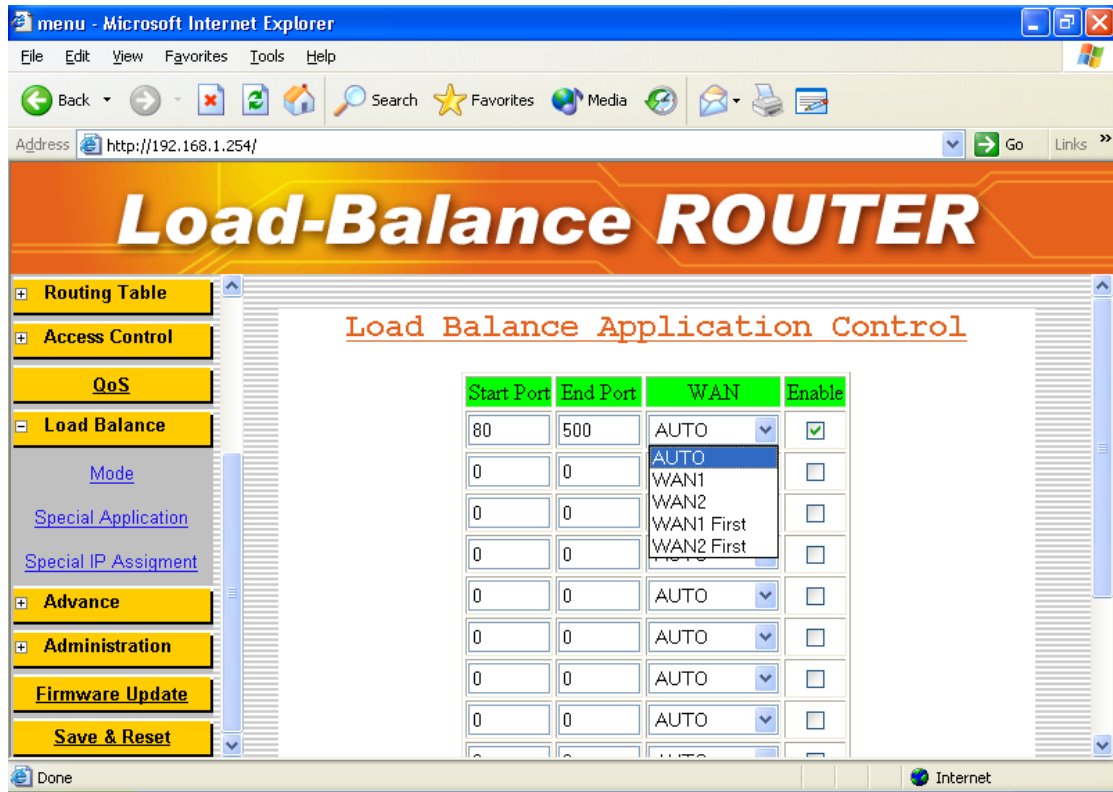
## LOAD BALANCE

The screenshot shows the same web browser window as the previous one, but with the "Traffic" radio button selected under the "Load Balance Mode" section. Below the "Traffic" radio button, there is a table with two rows and two columns. The first row has headers "Download Speed" and "Upload Speed". The second row has values "1000 (Kbits/s)" and "512 (Kbits/s)". The third row has values "2000 (Kbits/s)" and "64 (Kbits/s)". At the bottom of the main content area, there are "Ok" and "Cancel" buttons.

	Download Speed	Upload Speed
WAN1	1000 (Kbits/s)	512 (Kbits/s)
WAN2	2000 (Kbits/s)	64 (Kbits/s)

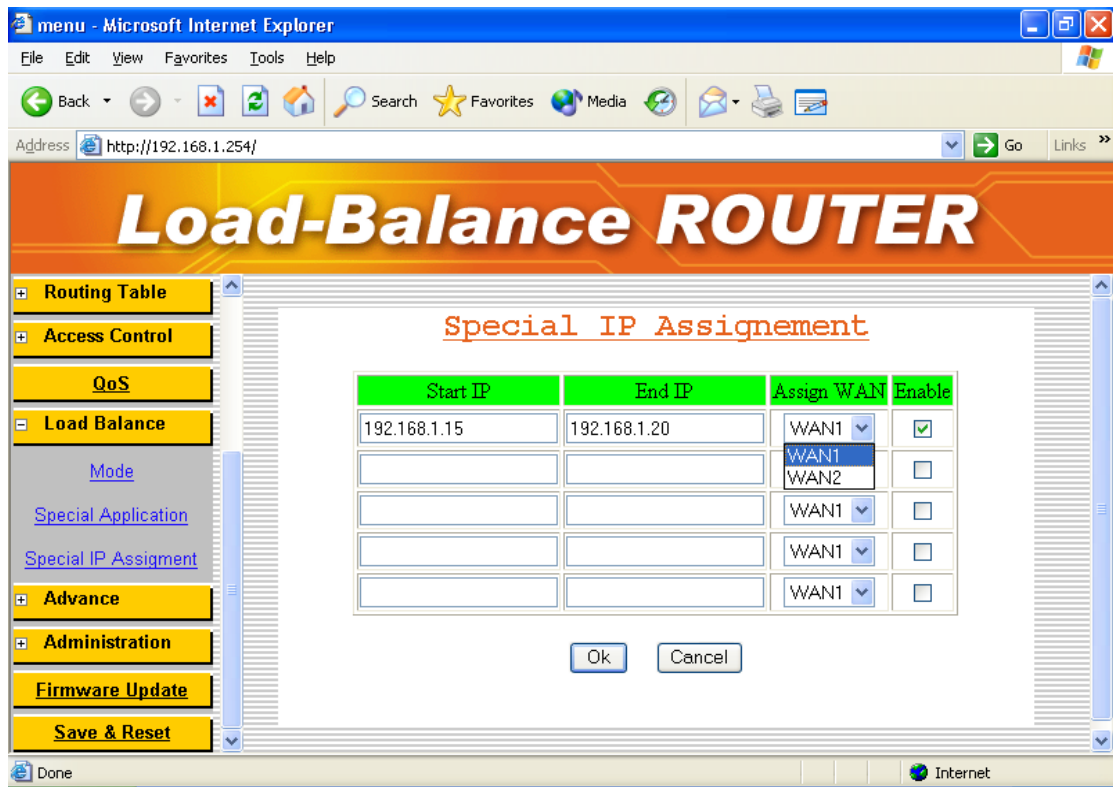
## 5.10.2 Special Application

Some Internet WEB server do not allow access with multi WAN address, also these WEB server was using dynamic IP address, in this case, this router can let you just define dedicated port number go to dedicated WAN port, the dedicated port was used to access these special WEB Server.



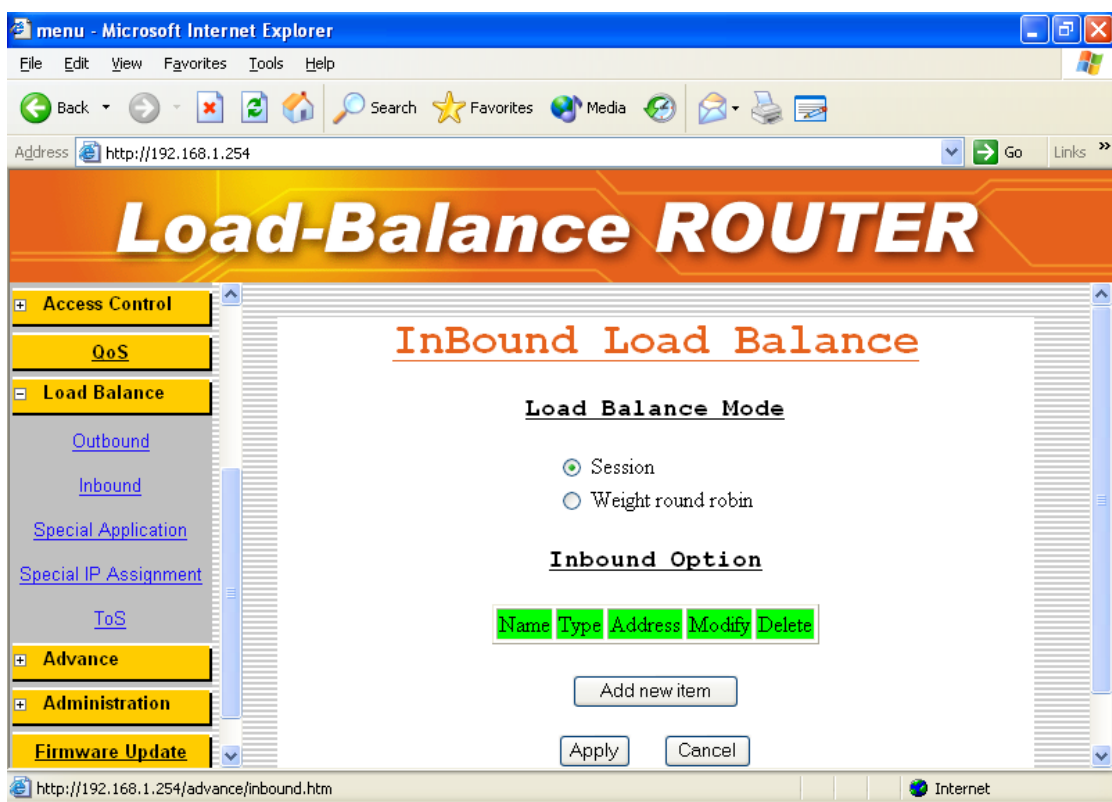
### 5.10.3 Special IP Assignment.

Same as above mentioned , this router can let you defined dedicated IP address ( destination IP address or Source IP address) go to dedicated WAN port.



In-Bound function can let you load sharing traffic that coming from Internet to access you internal server to each WAN link, this function can increase WAN Utilization. For detail usage, please refer to Chapter 6

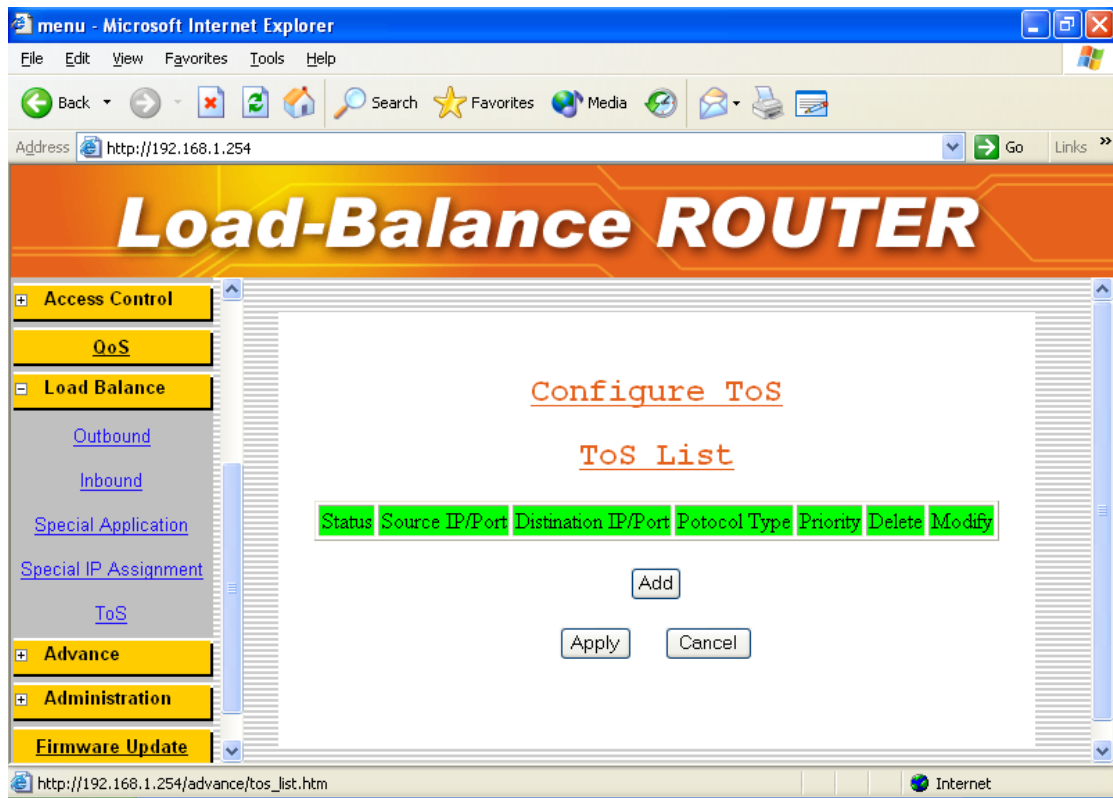
## In-Bound



### 5.10.5 TOS

TOS function can let you setting the priority for dedicated packet.

## TOS



## 5.11 Advance

### 5.11.1 Remote Configure

The ROUTER can be managed from any PC from INTERNET. If enable “remote configure” function in this display, access to the Web-based interface is available via the INTERNET, If not enabled, access is only available to PCs from LAN.

Access from LAN ..... specific 192.168.1.254 in the URL field

Access from INTERNET ...specific WAN port IP address in the URL field

**ROUTER provide easy method to access from INTERNET via  
“Dynamic IP” & “Dynamic port”**

**Remote IP:** specific dedicated PC can be remote access ROUTER

- Leaving these fields blank will allow access by all PCs.

- if enter specific IP address, only this address PC can access from remote
- The address must be Internet IP addresses.

**Remote Port:** The port number used when connecting remotely.

**Example:** If the local user

- . Enable the remote configure function
- . Remote port is **80 (default is 80, can be different port number)**
- . Remote IP is blank.
- . ROUTER WAN port IP is **110.111.112.1**

When the user of remote side want to access the ROUTER web configure, the remote user only need to enter **http:// 110.111.112.1:80**

## REMOTE CONFIGURE



### 5.11.2 Virtual Server / VPN Pass Through /ALG options

This Router support

- VPN Pass Through ..... IPSEC/PPTP
- H.323 ALG include.....VoIP Gateway can be connect direct to this router LAN port, and open the correspond VoIP port number.

You may have FTP, MAIL, VPN or other server on your LAN. If you would like to allow the global users access some servers providing special services on your LAN. This function can help you to do this.

Provide with global port & local port mapping function, let you easily Configured internal server with same port number mapping to WAN IP different port number.

**Global port:** WAN virtual protocol number

**Local port:** used by internal server port number

**Local IP:** local server IP address

For multi-wan port router, no matter data packet coming in from which WAN port (WAN IP address) , router will check incoming data port number only.

For example:

Global port number 1021 map into local server IP 192.168.1.10 port 21

Global port number 8080 map into local server IP 192.168.1.10 port 80

Global port number 2323 map into local server IP 192.168.1.25 port 23

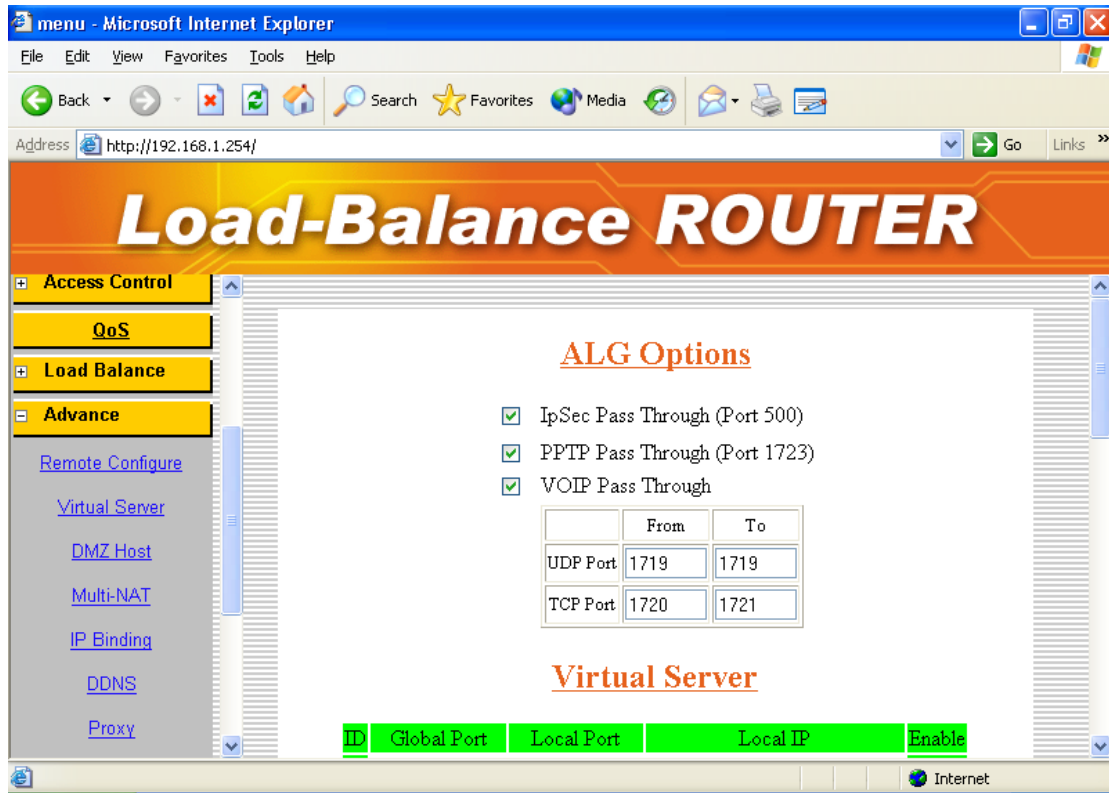
Global port number 1100 map into local server IP 192.168.1.13 port 21

you can also configure

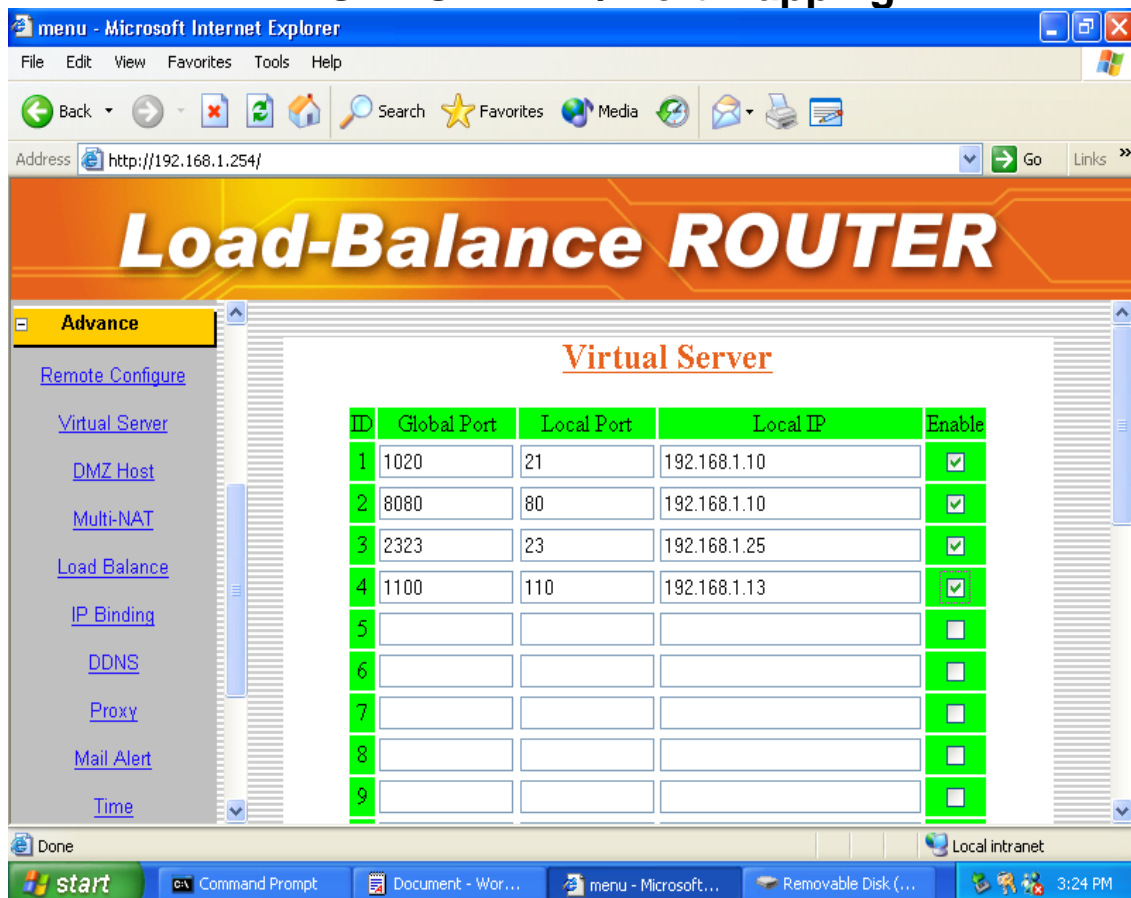
Global port number 1022 map into local server IP 192.168.1.20 port 21

some port number in local server with different global port number

## VIRTUAL SERVER/ALG Options



## VIRTUAL SERVER/ Port Mapping

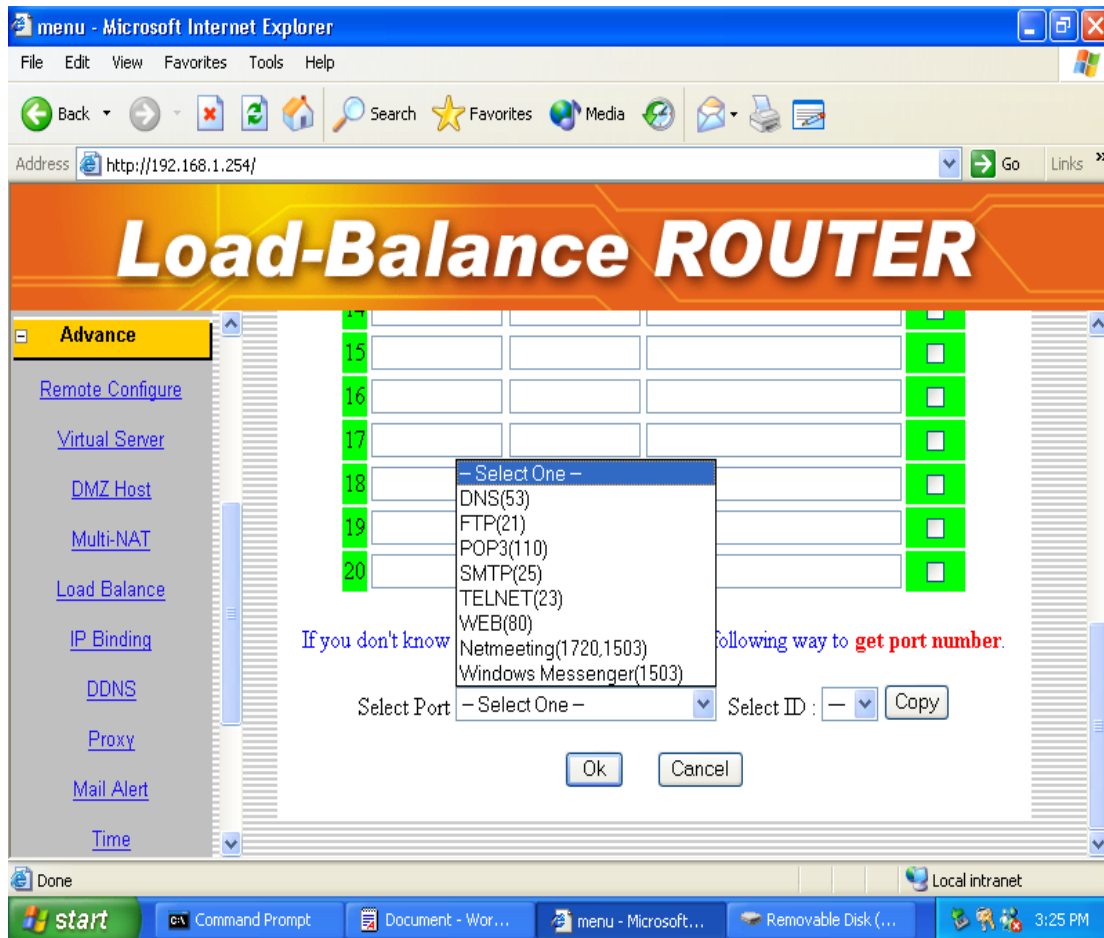


To use VPN Pass-Through function, you need to configure following port number in Virtual Server Table List.

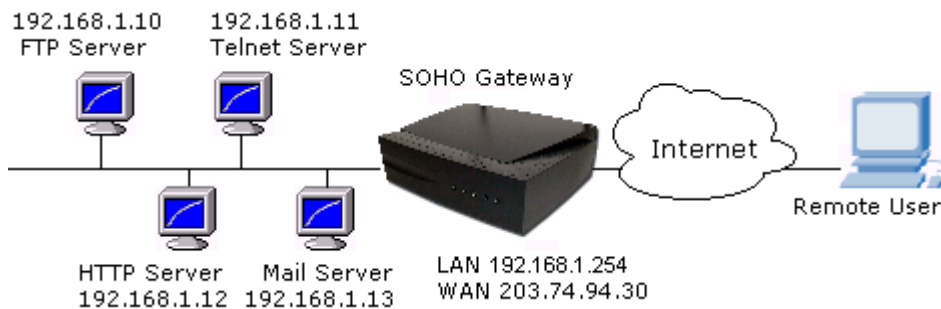


<u>protocol</u>	<u>port number</u>
PPTP	1723
IKE (IPSec)	500

## VIRTUAL SERVER



## VIRTUAL SERVER



**For example,**

Supposing you want to have four servers providing FTP, HTTP, Mail and Telnet services, you must enter four virtual servers and enable them. If users key in ftp://203.74.94.30, Broadband Router will send the data of FTP protocol to the server of 192.168.1.10. If users use telnet software to connect to 203.74.94.30, they will connect to the server of 192.168.1.11. If users key in http://203.74.94.30, Broadband Router will send the data of HTTP protocol to the server of 192.168.1.12. If users use the email to connect to 203.74.94.30, they can receive the mails in Mail server of 192.168.1.13.

### 5.11.3 DMZ Host

#### Dynamic IP DMZ

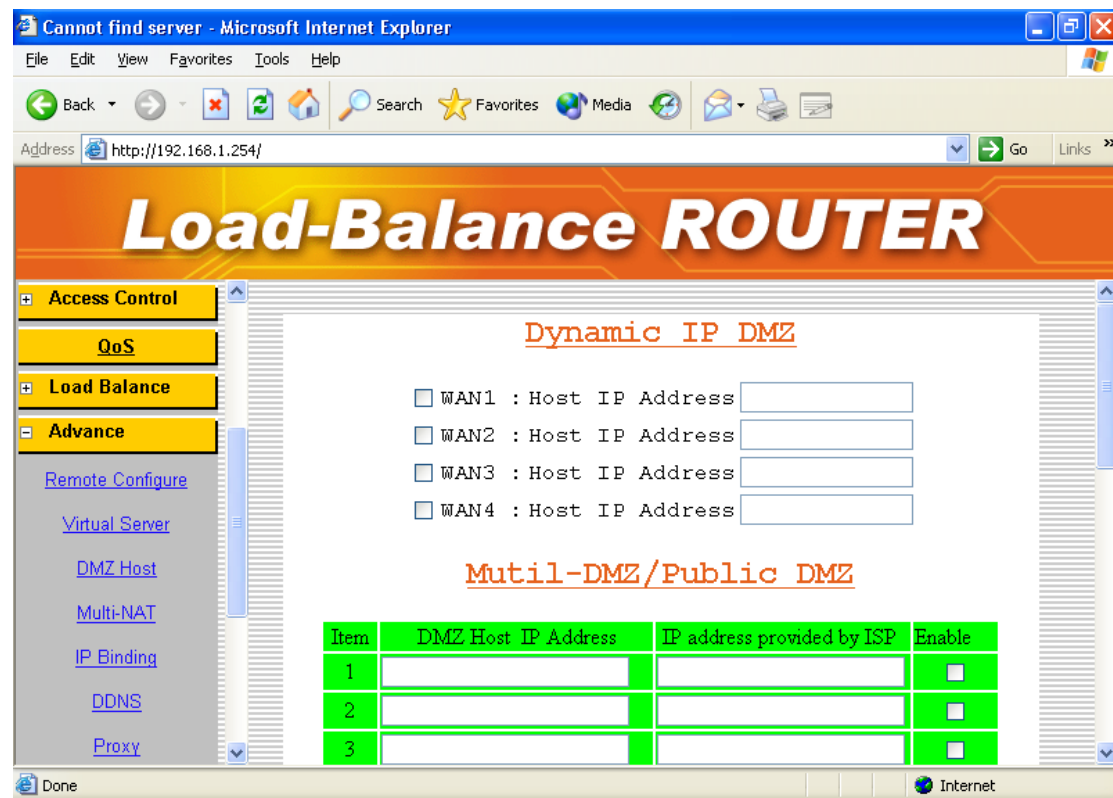
##### WAN : Host IP Address (PPPoE Mode)

When WAN port IP assigned by ISP obtained by PPPoE(**Dynamic IP**), you can fill in DMZ host that inside the network, the router will mapping WAN IP to internal DMZ host automatically.

#### Multi-DMZ/Public DMZ

When using this function, the WAN port IP need to be **FIX IP** assigned by ISP

## DMZ HOST



The **Demilitarized Zone (DMZ)** function provides a way for public servers (Web, e-mail, FTP, etc.) to be visible to the outside world (while still being protected from DoS (Denial of Service) attacks such as SYN flooding and Ping of Death). These public servers can also still be accessed from the secure LAN.

By default the firewall allows traffic between the WAN and the DMZ, traffic from the DMZ to the LAN is denied, and traffic from the LAN to the DMZ is allowed. Internet users can have access to host servers configured in DMZ Host list but no access to the LAN, unless special filter rules allowing access were configured by the administrator or the user is an authorized remote user.

It is highly recommended that you keep all sensitive information off of the public servers. Store sensitive information in computers on LAN.

If you would like to grant remote users the right to access one of your computers on LAN to perform some actions such as Internet games, you must enable the function of DMZ. When remote users access your legal IP(s),

Broadband Router will transmit these packets to the corresponding virtual IP(s).

**This Router support 3 type DMZ Host.( FIX IP Mode)**

- **Share-DMZ**
- **Multi-DMZ**
- **Public -DMZ**

**Type (1) : Share- DMZ**

**Share only one legal fix IP from ISP**

This Router provide “Share DMZ ” function, in case you only have one legal IP address provide by ISP with this function, can let you map legal IP between ROUTER WAN & LAN interface. when remote computer want to access the internal LAN. besides port number specific by Virtual Server Host . the rest port number with fix IP address will be mapping into internal Share-DMZ host

**For Example:**

ISP provide only 1 legal IP address to your office.

203.74.94.31

By using **Share-DMZ** function, you can configure DMZ host as follow.

DMZ Host IP Address

IP address provided by ISP

192.168.1.10

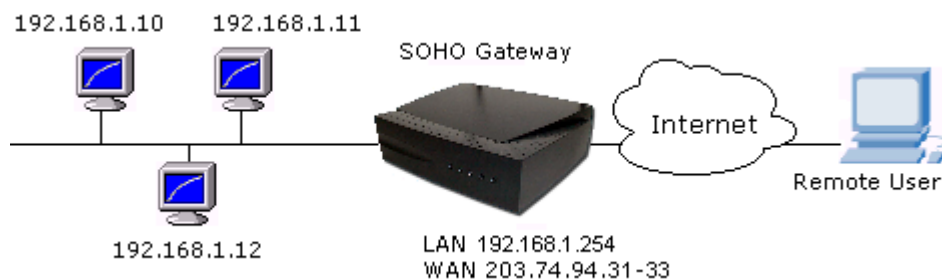
203.74.94.31

(Share-DMZ host)

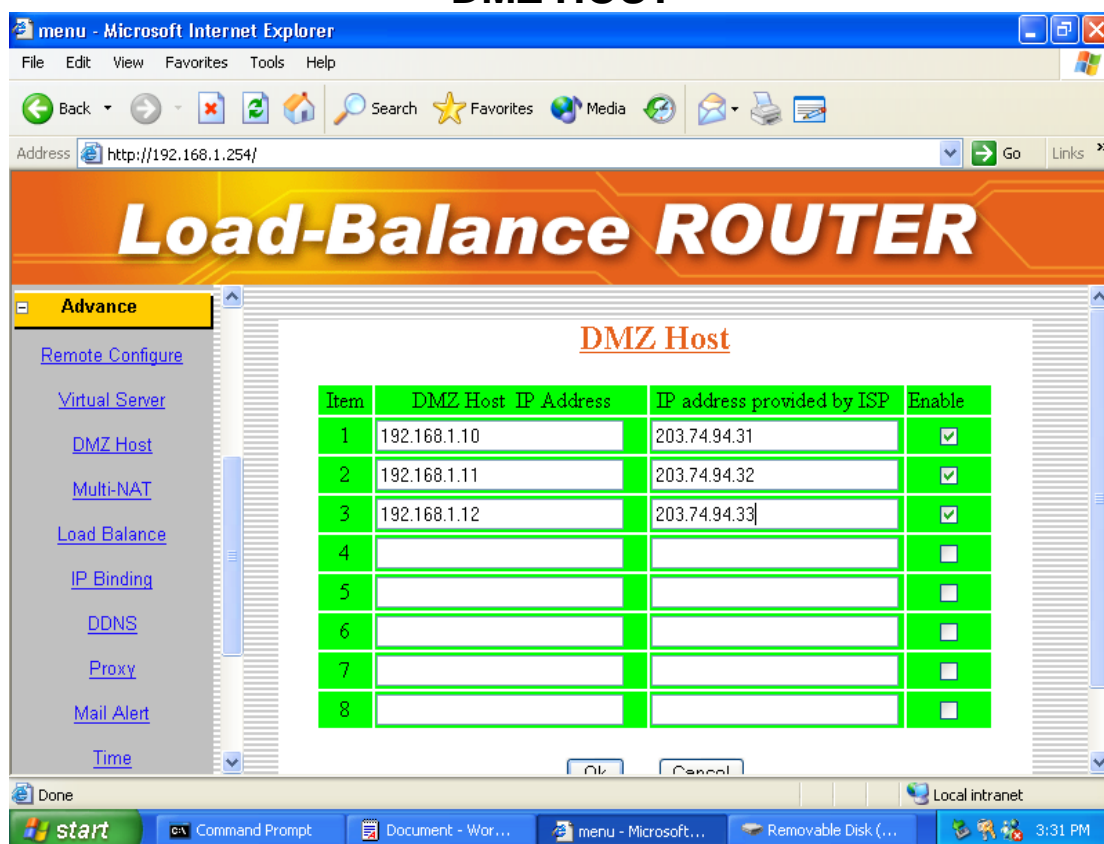
After configure ROUTER as above DMZ HOST table, the ROUTER will let data packet that destination address point to 203.74.94.31 pass through into inside DMZ Host which port number do not exist in Virtual Server Host table.

## Type (2) : Multi-DMZ several DMZ Hosts

if you own several legal IPs, you can assign which legal IP correspond to which IP on your LAN. This assignment will let most protocol to access the assigned IP on the LAN.



## DMZ HOST



## Type (3) : Public DMZ Public IP Mapping

This Router provide “Public IP Mapping” function, with this function, can let you map legal IP between ROUTER WAN & LAN interface. This application will be very useful to let you connect GAME Server or VOIP gateway inside the LAN, because most GAME SERVER or VOIP gateway need legal IP address to operation

**For Example:**

ISP provide following legal IP address to your office.(FIX IP)

203.74.94.31

203.74.94.32

203.74.94.33

203.74.94.34

By using DMZ function, you can configure DMZ host as follow.

DMZ Host IP Address

IP address provided by ISP

192.168.1.10

203.74.94.32

(private DMZ host)

203.74.94.33

203.74.94.33

(for GAME SERVER)

203.74.94.34

203.74.94.34

(for VOIP gateway)

After configure ROUTER as above DMZ HOST table, the ROUTER will let data packet that destination address point to 203.74.94.33/34 pass through into inside GAME SRVER and VOIP gateway .The ROUTER also allow LAN user ( like 192.168.1.xx) can access GAME SERVER or VOIP gateway.

**NOTE:**

if using “Public IP Mapping” function, the GAME SERVER & VOIP gateway will not have DoS function protect by this ROUTER.

#### 5.11.4 Multi-NAT

Multi-NAT function allow you to configure multiple LAN IP Domain to each WAN port( total 10 LAN IP can be defined), after configure multiple NAT function It will act like have virtual router connect to Broadband Router LAN port, all traffic between each LAN IP domain , will send and receive through broadband router. it will provide following benefit .

- . \* restrict broadcast storm in single IP domain.
- . \* Broadband router can check each packet with DoS function enable.

**LAN IP:** separated LAN IP domain.

**Subnet Mask:** mask for IP domain.

**WAN IP:** specific WAN IP address that match to LAN IP domain.

You can leave **blank** in this field for PPPoE connection/

Or write down specific WAN IP address, if WAN port had

Define multiple IP address on it (DMZ used)

Blank: router will send packet follow by WAN filed selected .

**WAN:** WAN1, WAN2, AUTO

WAN1/2/3/4 ...router will route packet to correspond LAN/WAN

AUTO.....router will route packet follow by “load balance”

Function selected

### MULTI-NAT

Item	LAN IP	Subnet MASK	WAN IP	WAN	Enable
1				AUTO	<input type="checkbox"/>
2				AUTO	<input type="checkbox"/>
3				WAN1	<input type="checkbox"/>
4				WAN2	<input type="checkbox"/>
5				AUTO	<input type="checkbox"/>
6				AUTO	<input type="checkbox"/>
7				AUTO	<input type="checkbox"/>
8				AUTO	<input type="checkbox"/>
9				AUTO	<input type="checkbox"/>
10				AUTO	<input type="checkbox"/>

### 5.11.6 IP Binding (Protocol Route Control)

In Internet world, there have some Game Server ,SSL protocol user or Personal Server have special request for connection, these special request include.

**(1). Use special port number to perform specific function.**

**(2). Not allow user connect with multiple WAN IP address**

For Example,

if user use load Balance function provide by router to connect Server, Server might response with many login display back to user, because each session comes different WAN port with different IP address, Server treat it like different request

By enable this function, you can specific the IP packet will go through dedicate WAN port to reach dedicate destination server. they will show only 1 IP address.

That means if destination server address show in this display, when user wants to reach these destination server, the packet will only go through dedicate WAN port, it can not have load balance function.

**Note:**

**IP Address:** destination server IP address, it will be restrict to dedicated WAN port.

“ if do not specific destination Host IP address in this field, the port number specific in the port number field will be limit packet transfer in dedicated WAN port.

**Starting port:** the packet of specific protocol port number will be restricted.

**End port:** the packet of specific protocol port number will be restricted

The protocol port number start from 0 to 65535, you can decide what range of port number will be restrict. if enter.

0	0	all packet will be restrict to dedicated WAN port
blank	blank	all packet will be restrict to dedicated WAN port
80	80	only packet type of port 80 will be restrict, the rest type packet will not be restrict, can use load balance function.
1	21	only packet type of port 1 to port 21 will be restrict, the rest type packet will not be restrict, can use load balance function.

**WAN:** select WAN port to be transfer packet for dedicated destination packet.

#### Example (1)

<u>IP Address</u>	<u>Start port</u>	<u>End Port</u>	<u>WAN</u>
210.3.1.23	0	65535	WAN1

All packet go to Internet Host with IP 210.3.1.23 will be restrict to dedicated WAN 1

#### Example (2)

<u>IP Address</u>	<u>Start port</u>	<u>End Port</u>	<u>WAN</u>
210.3.1.23	0	0	WAN2

Packet type belong to protocol 23 that go to Internet Host with IP 210.3.1.23 will be restrict to dedicated WAN2

#### Example (3)

<u>IP Address</u>	<u>Start port</u>	<u>End Port</u>	<u>WAN</u>
Blank	21	21	WAN1

Packet type belong to protocol 21(FTP) that go to any of Internet Host will be restrict to dedicated WAN1



## IP BINDING (Protocol Route Control)

**Load-Balance ROUTER**

[Remote Configure](#)

- [Virtual Server](#)
- [DMZ Host](#)
- [Multi-NAT](#)
- [Load Balance](#)
- [IP Binding](#)
- [DDNS](#)
- [Proxy](#)
- [Mail Alert](#)
- [Time](#)
- [System Log](#)

### IP Binding

Remote IP	Start Port	End Port	WAN	Enable
110.12.11.10	21	80	WAN1	<input checked="" type="checkbox"/>
13.45.50.2	23	23	AUTO	<input checked="" type="checkbox"/>
			AUTO	<input type="checkbox"/>
			WAN1	<input type="checkbox"/>
			WAN2	<input type="checkbox"/>
			WAN1 First	<input type="checkbox"/>
			WAN2 First	<input type="checkbox"/>
			AUTO	<input type="checkbox"/>
			AUTO	<input type="checkbox"/>
			AUTO	<input type="checkbox"/>
			AUTO	<input type="checkbox"/>

Done Internet

start Cannot find server - ... menu - Microsoft Inte... Document - WordPad 9:34 AM

### 5.11.7 DDNS (Gateway Mode / Basic NAT Mode only)

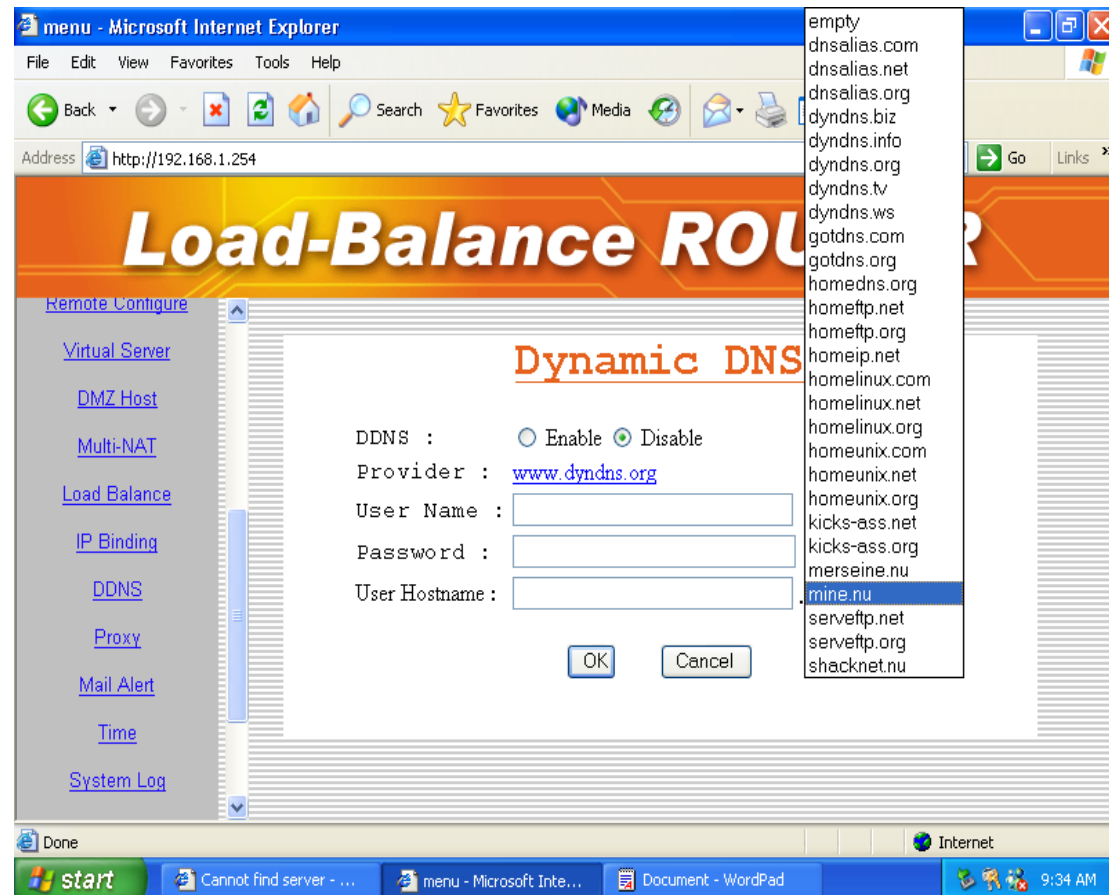
You need to apply for a free DNS domain name from [www.dyndns.org](http://www.dyndns.org). Broadband Router will update the WAN IP address to DDNS's database once a WAN port was connected to Internet if DDNS function is enabled. And the users in Internet can find out the Broadband Router via this domain name.

**User Name:** please apply from [www.dyndns.org](http://www.dyndns.org)

**Password:** please apply from [www.dyndns.org](http://www.dyndns.org)

**User Hostname:** please apply from [www.dyndns.org](http://www.dyndns.org)

## DYNAMIC DNS



### 5.11.8 Proxy

This function work together with **Mail Alert** function, if there have Proxy Server in your local LAN, please fill in necessary Proxy information in this display. Some environment needs to fill in Proxy information.

## PROXY

The screenshot shows a Microsoft Internet Explorer browser window displaying the 'Load-Balance ROUTER' web interface. The address bar shows 'http://192.168.1.254'. The left sidebar contains a list of navigation links: [Virtual Server](#), [DMZ Host](#), [Multi-NAT](#), [Load Balance](#), [IP Binding](#), [DDNS](#), [Proxy](#), [Mail Alert](#), [Time](#), [System Log](#), and [MAC Address Clone](#). The 'Administration' section is currently selected. The main content area is titled 'Configure Proxy' and contains the following configuration options:

- Proxy : ☐ Enable ☒ Disable
- Proxy IP :
- Proxy Port :
- 

The Windows taskbar at the bottom shows the start button, several open applications (including 'Cannot find server - ...', 'menu - Microsoft Inte...', and 'Document - WordPad'), and the system clock indicating 9:35 AM.

### 5.11.9 Mail Alert

- Gateway Mode / Basic NAT Mode only -

Enter the **Receiver/ Sender** e-mail Address in the fields and check the items you want. System will send e-mails to **Receiver** address once the conditions meet the setting.

**Receiver mail address:** The mail address that will receive alert mail

**Sender mail address:** The mail address that send out alert mail, you

Should fill in a legal format address

(ex . [router@yahoo.com](mailto:router@yahoo.com) )

#### Example 1

When “log record “ is 50, means when condition happen 50 times. The router will send 50-log message together to **Receiver**.

#### Example 2

When “log record “ is 1, means when each condition happen. The router will send log message to **Receiver** every time.

“log record” range : 1~150.

Broadband Router provides four condition selections:

<b>WAN Up</b>	System will send the mail, once WAN port(s) is connected to Internet.
<b>WAN Down</b>	System will send the mail, once WAN port(s) is disconnected from Internet.
<b>DoS Attack</b>	System will send the mail, once the selected is conditions in DoS occurred.( need to enable DoS function)
<b>System log</b>	System will send the mail of log information, once the log records conform to your setting.

# MAIL ALERT

menu - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Media

Address <http://192.168.1.254> Go Links

## Load-Balance ROUTER

[Virtual Server](#)

[DMZ Host](#)

[Multi-NAT](#)

[Load Balance](#)

[IP Binding](#)

[DDNS](#)

[Proxy](#)

[Mail Alert](#)

[Time](#)

[System Log](#)

[MAC Address Clone](#)

[Administration](#)

### Configure Mail Alert

Mail Alert : ☐ Enable ☒ Disable

**E-Mail Address**

Receiver E\_mail Address :

Sender E\_mail Address :

**Alert Condition**

☒ WAN Up

☒ WAN Down

☒ DoS Attack

Done Internet

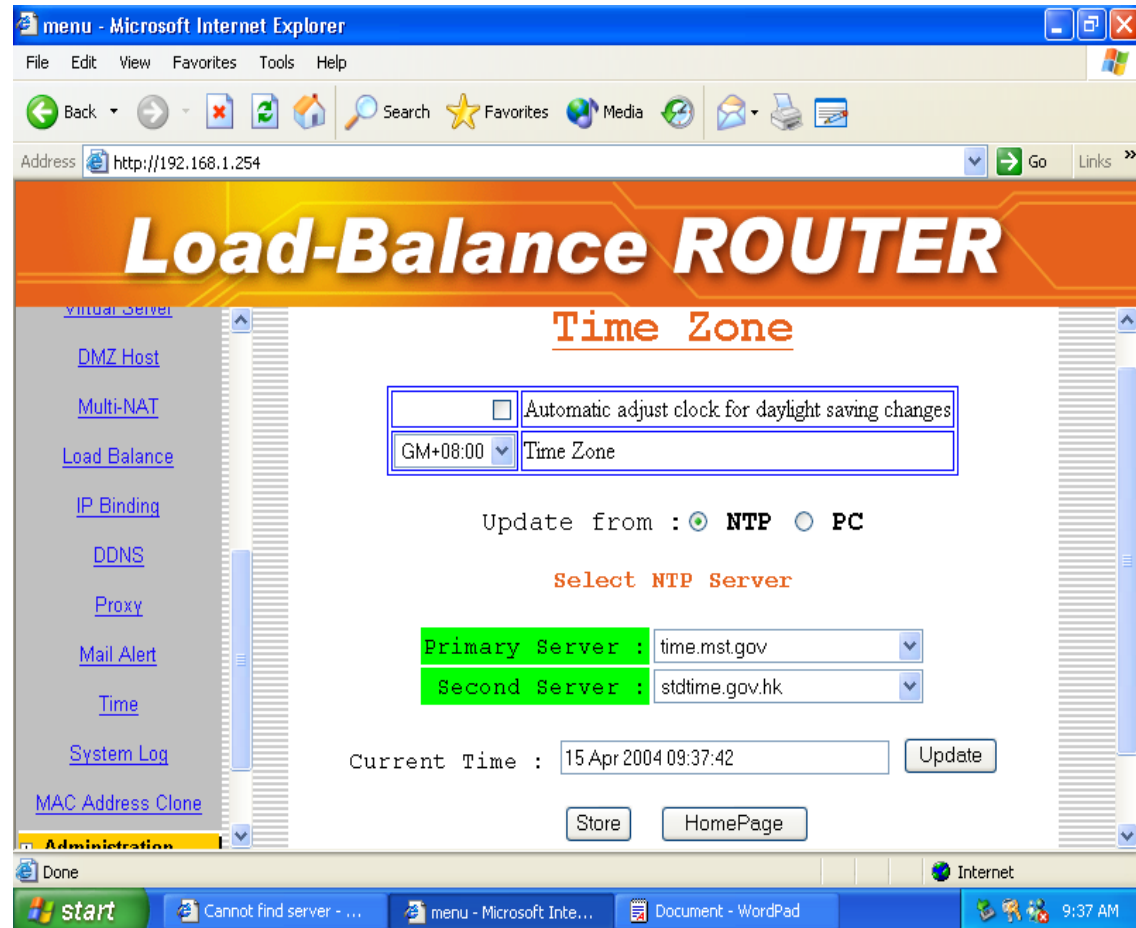
start Cannot find server - ... menu - Microsoft Inte... Document - WordPad 9:36 AM

#### 5.11.10 Time (Gateway Mode / Basic NAT Mode only)

Broadband Router will obtain the GMT (Greenwich Mean Time) after connected to Internet. You need to indicate the local time so that the system could show the correct time. For example, Taiwan's local time is GMT + 8 hours.

Select "Automatic adjust clock for daylight saving changes" will display the time one hour earlier than local time.

### TIME



### 5.11.11 System Log

Show all the records after Broadband Router Power on, such as WAN port up/down, WAN IP address, the obtained time, DDNS current corresponding WAN IP address and so forth. You can also save these data to files.

## SYSTEM LOG

menu - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Media Print Mail

Address <http://192.168.1.254> Go Links

# Load-Balance ROUTER

[Load Balance](#)  
[IP Binding](#)  
[DDNS](#)  
[Proxy](#)  
[Mail Alert](#)  
[Time](#)  
[System Log](#)  
[MAC Address Clone](#)

**Administration**  
**Firmware Update**  
**Save & Reset**

## System Log

Item	Time	Content
1	1970-01-01 00:00	WAN0 set to 100M Full
2	1970-01-01 00:00	WAN0 set to 100M Full
3	1970-01-01 00:00	WAN0 link fail
4	1970-01-01 15:33	WAN1 Cable On 10M half
5	1970-01-01 15:33	Gateway 1 (192.168.11.254) NOT found
6	1970-01-01 15:33	Gateway 1 (192.168.11.254) NOT found
7	1970-01-01 15:33	Gateway 1 (192.168.11.254) NOT found
8	1970-01-01 15:33	Gateway 1 (192.168.11.254) NOT found
9	1970-01-01 15:33	Gateway 1 (192.168.11.254) NOT found
10	1970-01-01 15:34	Gateway 1 (192.168.11.254) NOT found

Done Internet

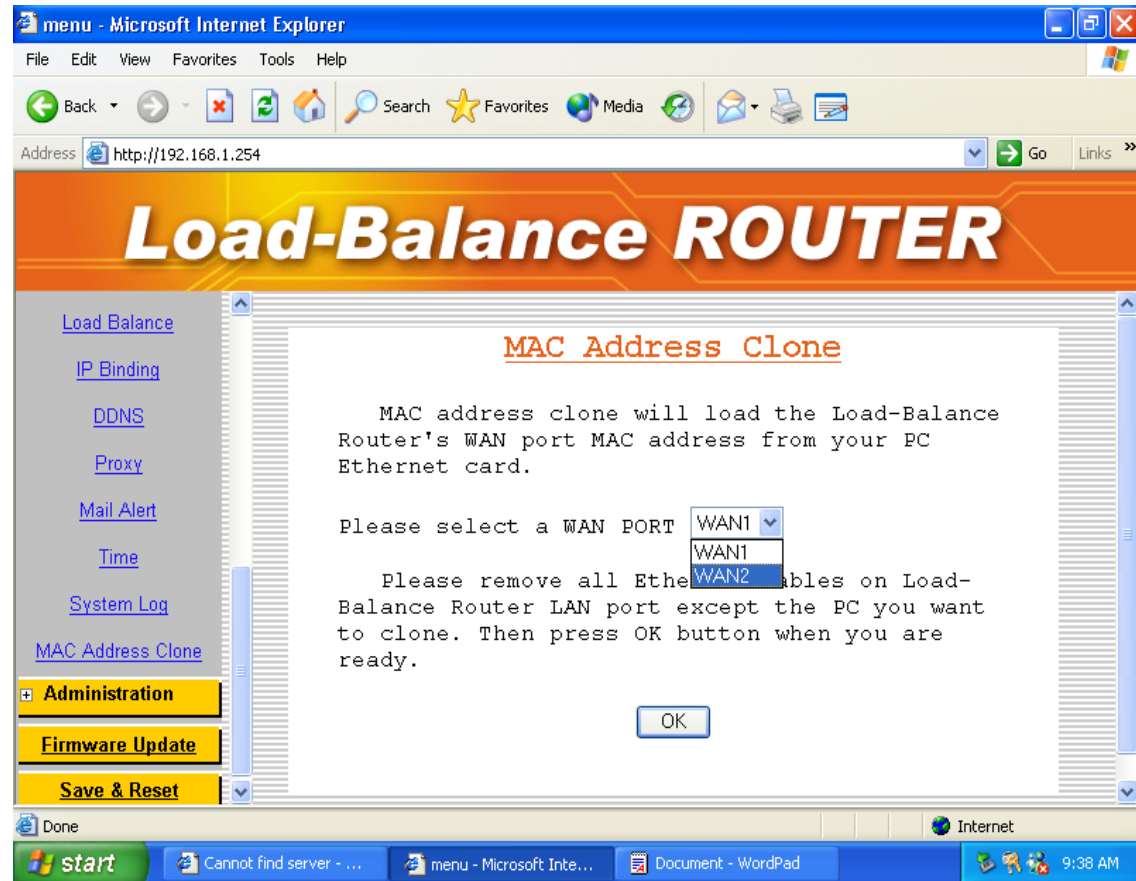
start Cannot find server - ... menu - Microsoft Inte... Document - WordPad 9:37 AM

### 5.11.12 MAC Address Clone

If your ISP blocked the MAC address of a network card, you may use MAC Address Clone to duplicate the MAC address to the Mac address in each WAN port.

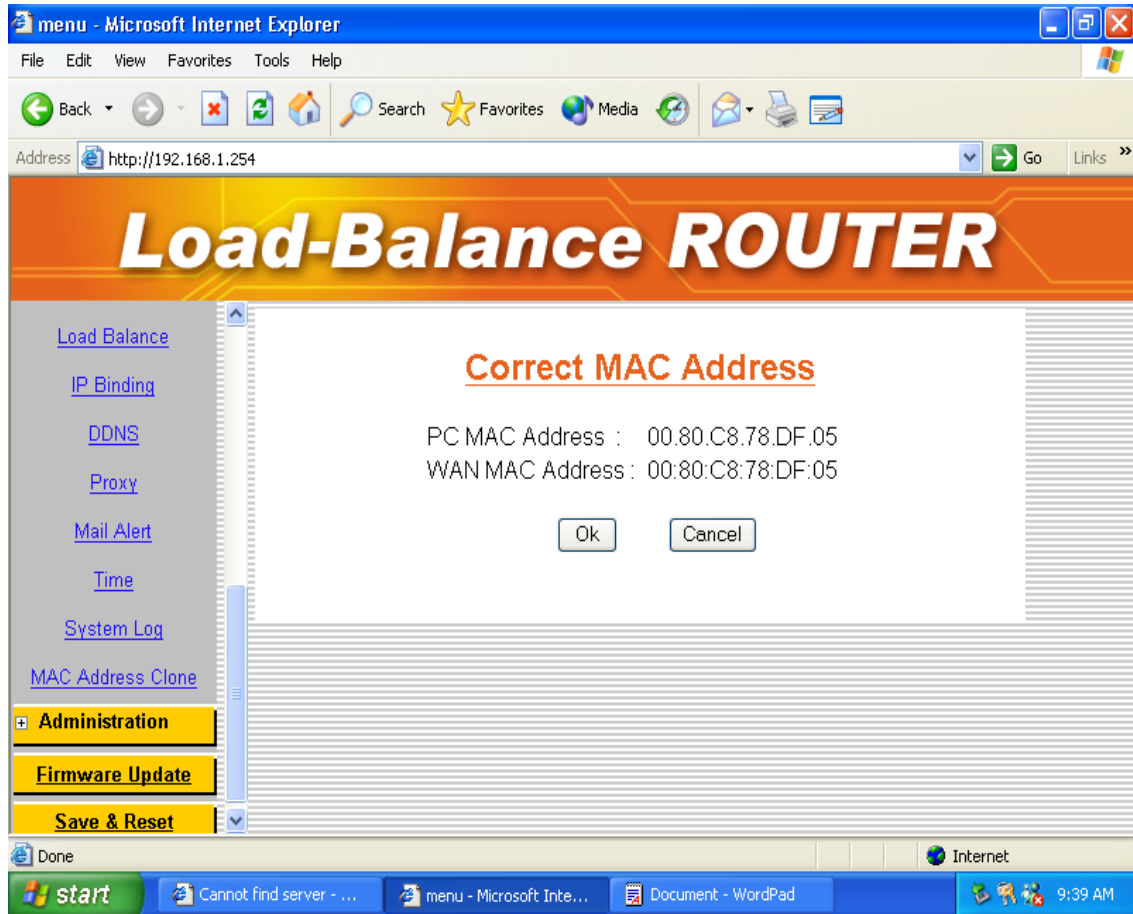
Remove all Ethernet cable on Broadband Router LAN port except for the PC you want to clone. Then press **Ok** when you ready.

## MAC ADDRESS CLONE





## MAC ADDRESS CLONE



you need to **reboot** your Broadband Router after finished cloning to make new MAC address takes effects.

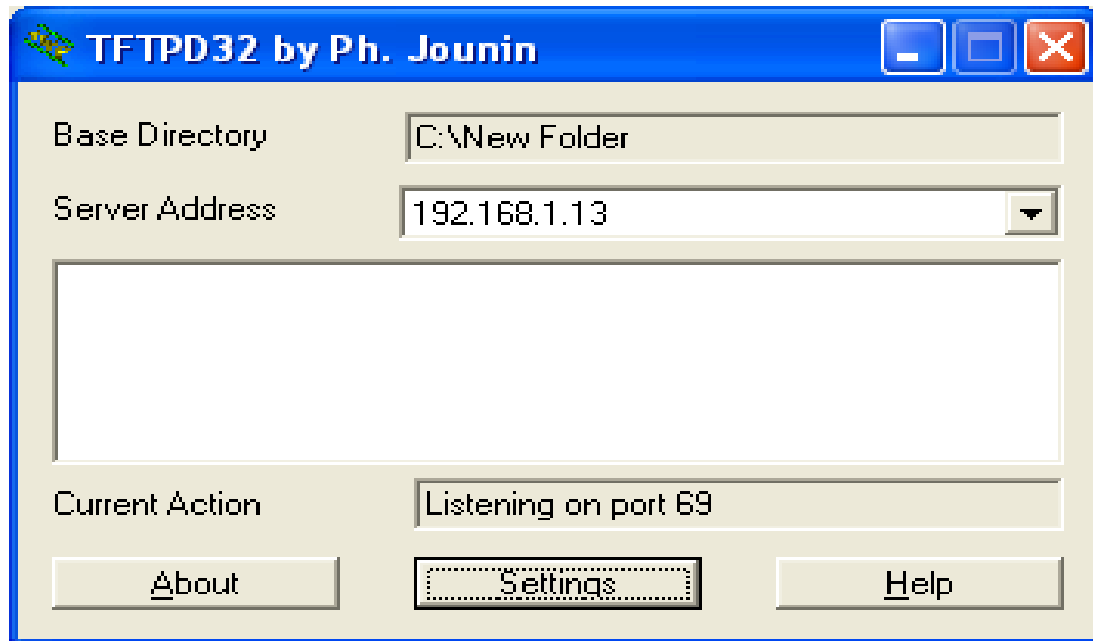
## 5.12 Firmware Update

Broadband Router allows you to easily update the embedded firmware. We will occasionally provide new firmware on the web site to help you updating the firmware of your Broadband Router. Follow the procedure to update your firmware after downloaded the new code.

### Method 1:

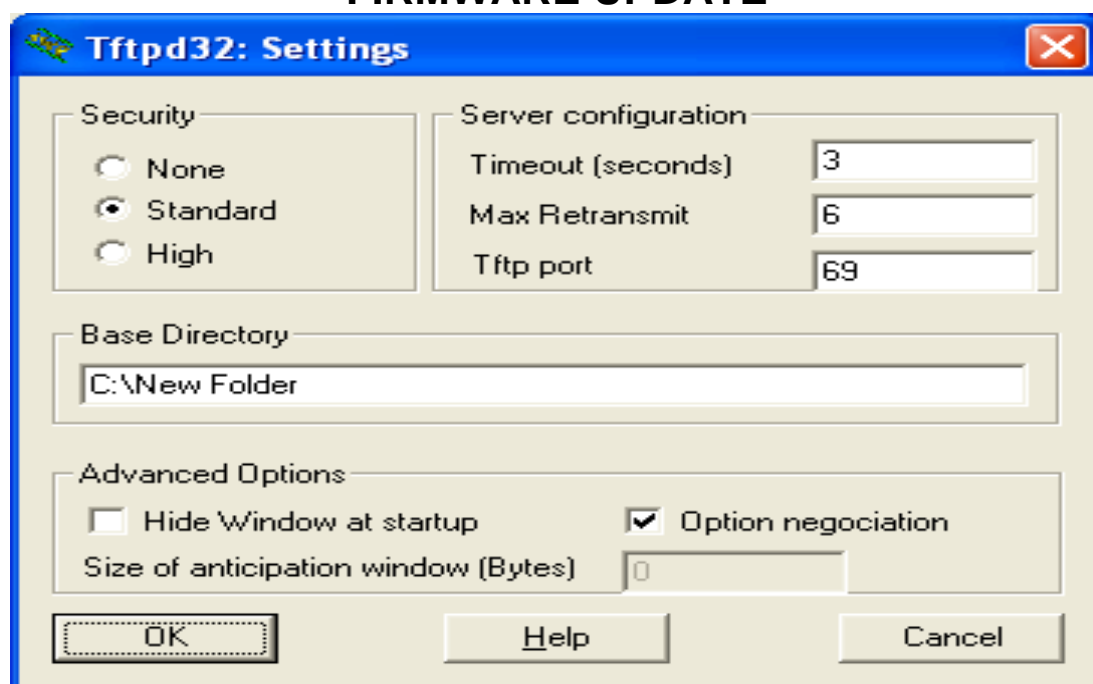
Run a TFTP server program such as TFTP32. (TFTP32 is a shareware and you may download it or other TFTP server programs from Internet.)

### FIRMWARE UPDATE



Make a base directory in this server.

### FIRMWARE UPDATE



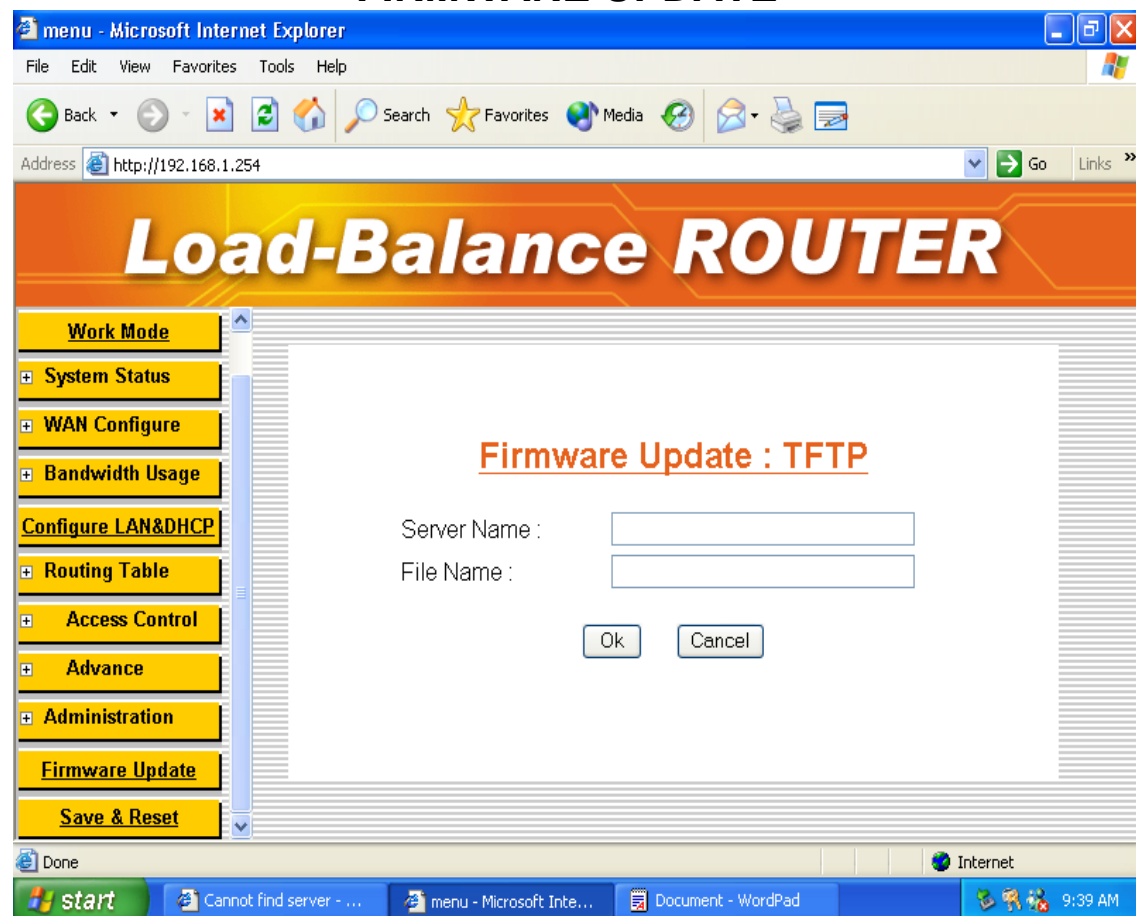
Save the image file of firmware to the directory of TFTP32.

### FIRMWARE UPDATE



Enter the **Server Name** and **File Name** in the new folder fields of **Firmware Update** window and then click **Ok**.

## FIRMWARE UPDATE



You will see the updating processing. After finishing update procedure, you must **reboot** Broadband Router to run new code.

### Method 2:

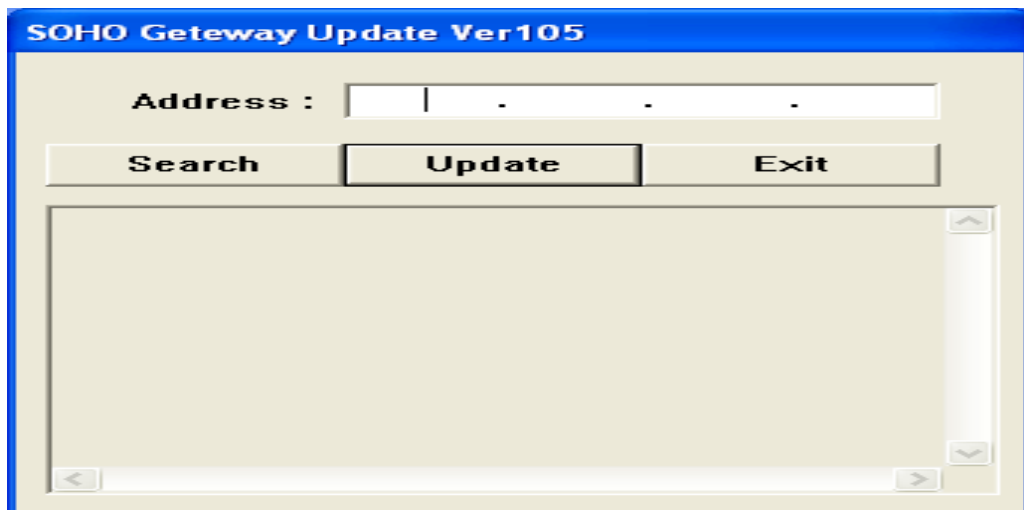
Double click the executable file (the file with exe extension file name) you downloaded. Here we take **v105.exe** as the example of new version file.

## FIRMWARE UPDATE



Click **Search** to find the IP of Broadband Router.

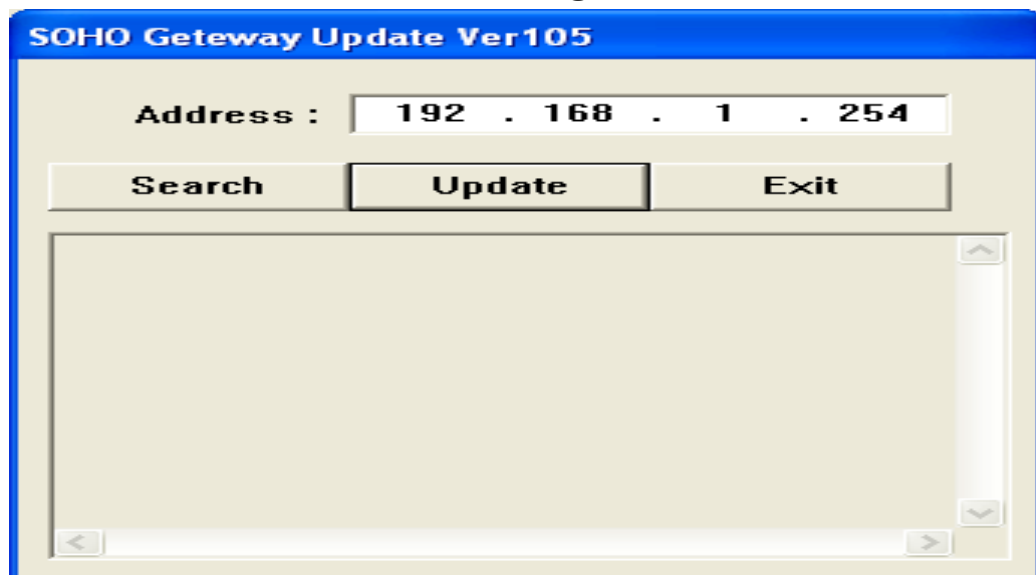
## FIRMWARE UPDATE



The screenshot shows a window titled "SOHO Gateway Update Ver105". It features a label "Address :" followed by a text input field containing three dots, indicating an empty IP address. Below the input field are three buttons: "Search", "Update", and "Exit". A large, empty rectangular area with a vertical scrollbar is positioned below the buttons.

The IP address of Broadband Router is **192.168.1.254** (default value).

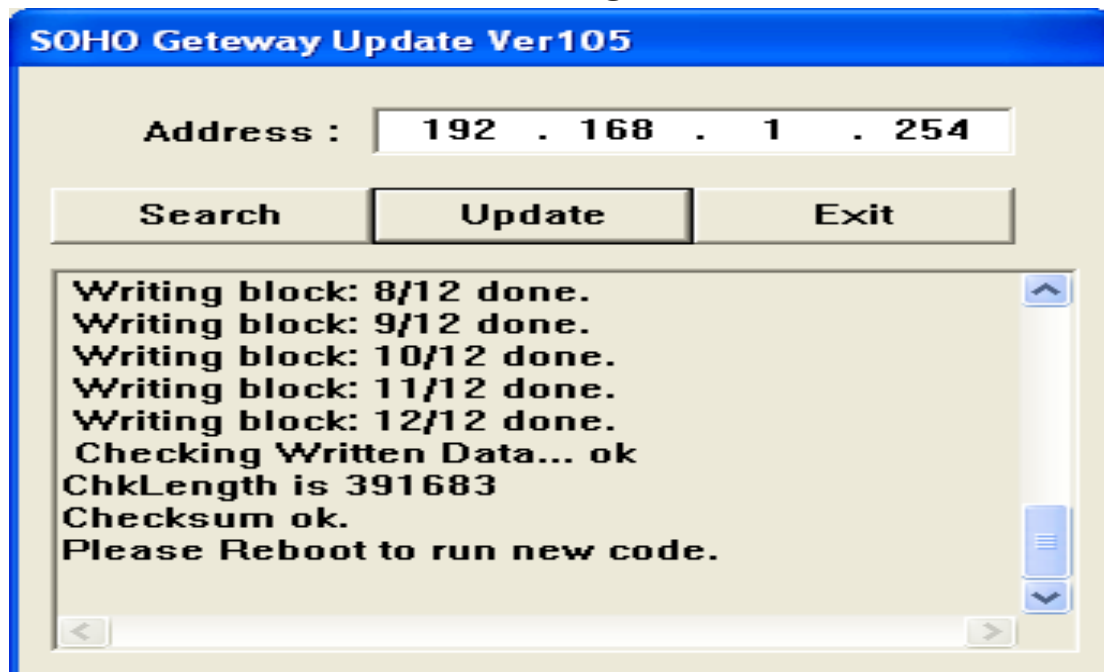
## FIRMWARE UPDATE



The screenshot shows the same "SOHO Gateway Update Ver105" window. The "Address :" input field now contains the IP address "192 . 168 . 1 . 254". The "Search", "Update", and "Exit" buttons remain below the input field. The large rectangular area with a vertical scrollbar is still empty.

Click **Update** to update the firmware.

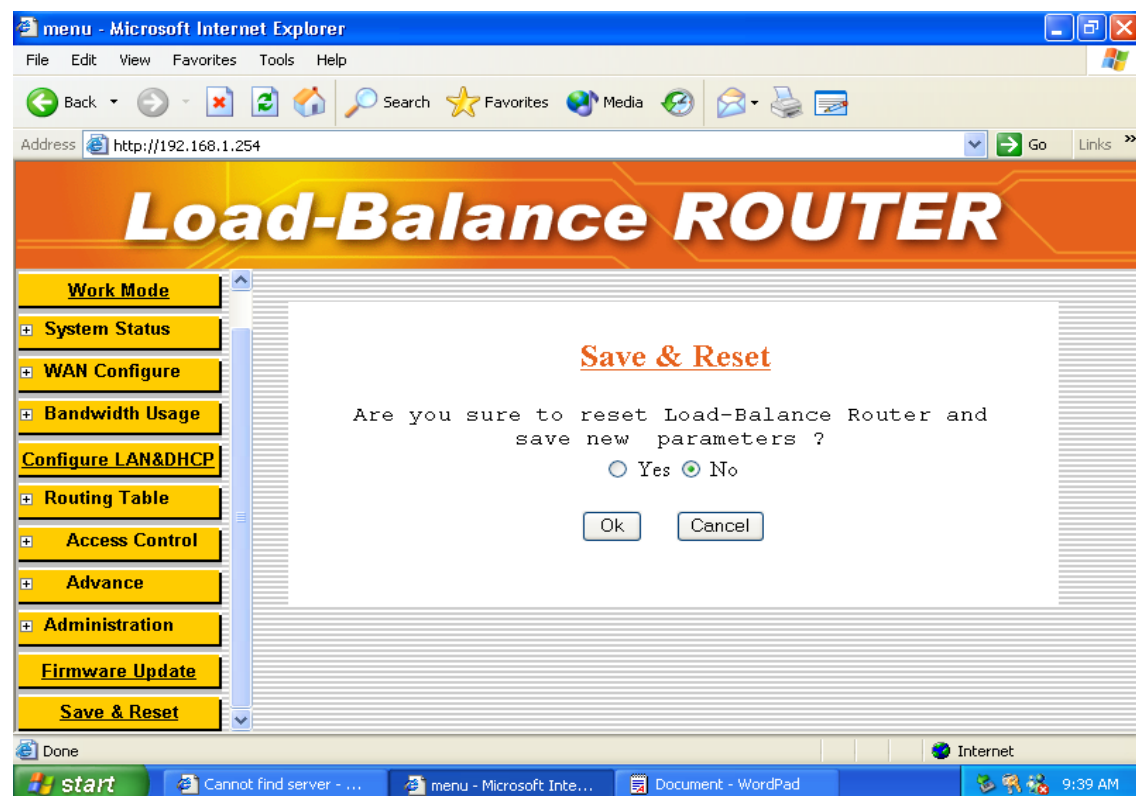
## FIRMWARE UPDATE



### 5.13 Save & Reset

In order to save the configuration changes that have been made to the Broadband Router you must save them to the Broadband Router's Flash memory. If you do not save the changes, the configuration settings will be lost in the event of a power loss or system reboot to the Broadband Router.

## SAVE & RESET



## CHAPTER 6 IN-BOUND FUNCTION

Authorities DNS is just a fancy term for the official IP address keeper/provider of particular Domain (or Internet) name, such as [www.example.com](http://www.example.com) is analogous to a telephone book where a person's name is associated with his telephone number. Wikipedia, the free encyclopedia has a good general discussion of DNS: [http://en.wikipedia.org/wiki/Domain\\_Name\\_System](http://en.wikipedia.org/wiki/Domain_Name_System)

This IN-BOUND ROUTER DNS server contains the names and Internet addresses of servers that you wish to host. In order for all DNS requests for your domain names to be ultimately routed to your IN-BOUND ROUTER, it has to be setup at the registrar of your Internet name. In general, logon to your registrar site, and manage your domain name. For example, [www.example.com](http://www.example.com) Currently is located at a WEBhosting company: Domain servers in listed order:

NS0.DNSMADEEASY.COM                      NS1.DNSMADEEASY.COM

NS2.DNSMADEEASY.COM                      NS3.DNSMADEEASY.COM

NS4.DNSMADEEASY.COM We need to change [www.example.com](http://www.example.com) to be hosted by IN-BOUND ROUTER; so we follow the registrar's instructions and delete: NS2, NS3, and NS4, and assign:

Domain servers:

Domain servers:

Name	IP address
NS0.EXAMPLE.COM	WAN1
NS1.EXAMPLE.COM	WAN2

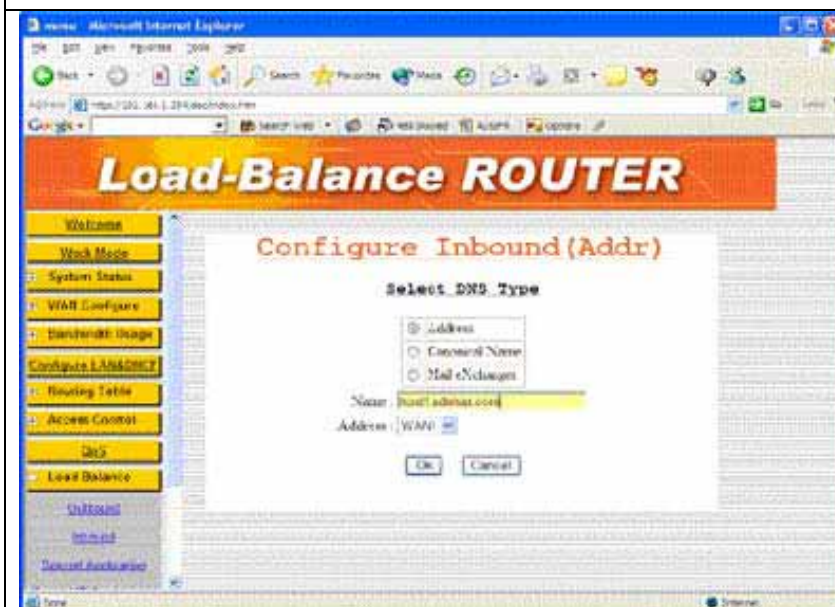
The name is arbitrary; what are important are the IP addresses. It is absolutely necessary for WAN1 to be a static address, and for redundant, fault-tolerant accesses, WAN2 should also be a static address. It would take approximately 24 – 48 hours for this change to take effect throughout the Internet. Below is the actual display of godaddy for Name Servers.





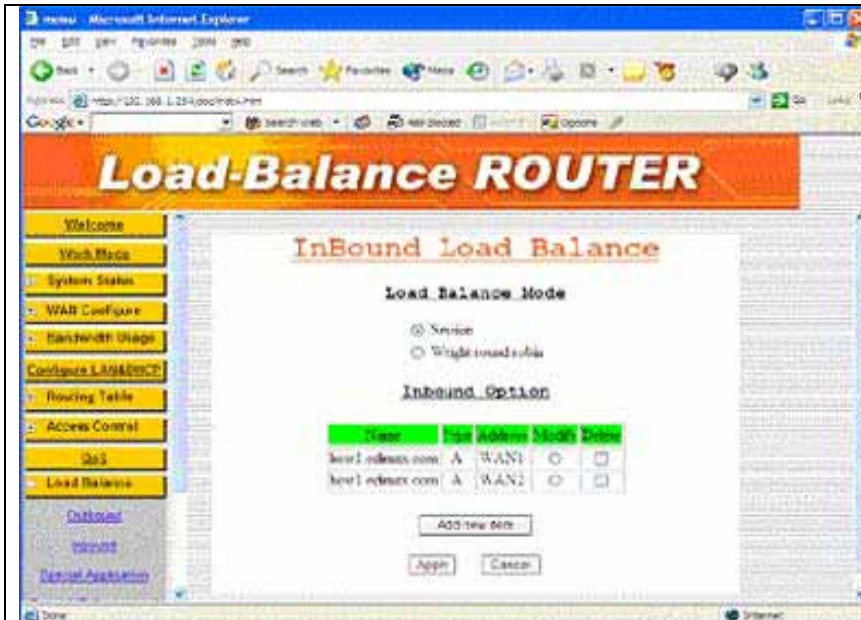


Click on [Add New Item]



We will enter a make up name: host1.example.com 2 times, once for WAN1 and once for WAN2 with DNS Type: Address This display show the 1st time for WAN1. After Clicking [OK]. Repeat the immediate previous figure, one more time with the same name but this time for WAN2.

You don't need to explicitly enter any IP address.



Now, we have 2 entries in the DNS table: Click on [Add New Item] again



This time we are adding the DNS record with the real name that we wanted for our WEBserver. Select DNS Type: Canonical Name

Name:  
www.example.com  
Host:  
host1.example.com



We have configured the IN-BOUND ROUTER DNS server for the simplest case.



In the IN-BOUND ROUTER router configuration: Advance > Virtual Server

The screenshot shows the Mikrotik WinBox interface for configuring a Load-Balance Router. The 'Virtual Server' tab is selected, showing a table with the following data:

ID	Global Port	Local Port	Local IP	Enable
1	80	80	192.168.1.100	<input checked="" type="checkbox"/>
2				<input type="checkbox"/>
3				<input type="checkbox"/>
4				<input type="checkbox"/>
5				<input type="checkbox"/>
6				<input type="checkbox"/>
7				<input type="checkbox"/>
8				<input type="checkbox"/>
9				<input type="checkbox"/>
10				<input type="checkbox"/>
11				<input type="checkbox"/>
12				<input type="checkbox"/>
13				<input type="checkbox"/>
14				<input type="checkbox"/>
15				<input type="checkbox"/>

The left sidebar shows the configuration tree with 'Load-Balance' selected. The top bar shows the Mikrotik WinBox title and various system icons.

The port for  
www.example.com  
is 80 and the IP  
address is:  
192.168.1.100  
Enter: Global  
Port: 80 Local  
Port : 80 Local  
IP :  
192.168.1.100  
Check :  
enable Then Click  
on APPLY

The screenshot displays the Mikrotik WinBox web interface in Internet Explorer. The main content area shows the 'Save & Reset' configuration page for the Load Balancer. A confirmation dialog box is open, asking: 'Are you sure to reset Load-Balancer Router and save new parameters?'. The dialog includes two radio buttons, 'Yes' and 'No', and 'Ok' and 'Cancel' buttons at the bottom. The left sidebar contains a menu with options like 'Work Mode', 'System Status', 'WAN Configure', 'TechSupport Usage', 'Configure LAN/WAN', 'Routing Table', 'Access Control', 'QoS', 'Load Balancer', 'Advance', 'Advertisement', 'Firmware Update', and 'Save & Reset'. The 'Load Balancer' option is currently selected. The top status bar indicates 'Done' and 'Internet'.

In order for the Inbound Load Balancing to take effect, we will need to do a system reset. Select Yes and Click on Ok

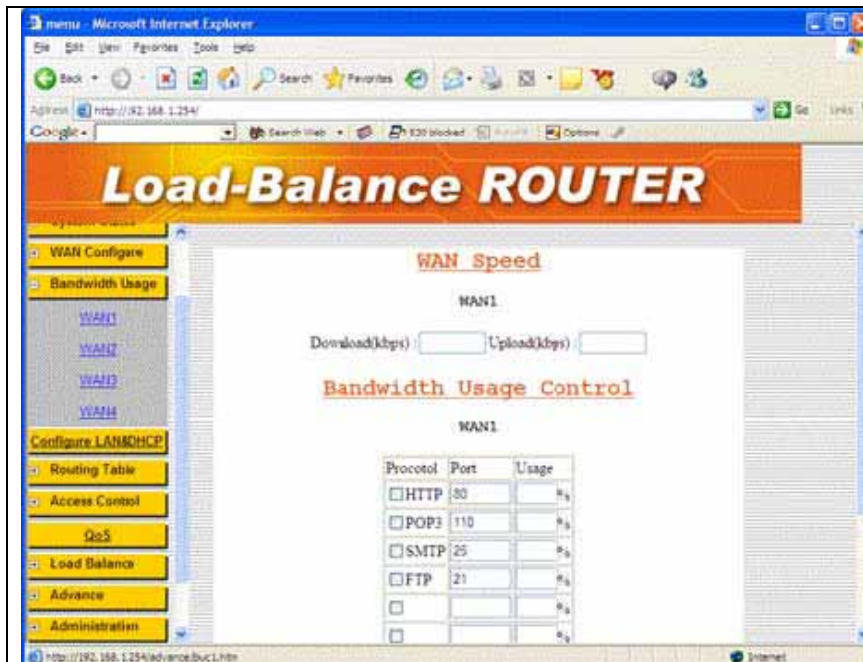
## 1.2 Advanced Load Balancing

We will describe Inbound Load Balancing using “Weighted round robin” algorithm for: three Internet servers:

1. Web server, [www.example.com](http://www.example.com), using WAN1 – WAN2, with ratio of 1:2
2. FTP server, [ftp.example.com](http://ftp.example.com), using WAN1 –WAN4, with ration of 1:2:3:4
3. Mail server, mail.example.com, using WAN3 & WAN4, with ratio of 3:4

The ratio of 1:2, as in case 2 above means that for subsequent users’ DNS request, for every return of IP address of WAN1, there will be two IP address of WAN2.

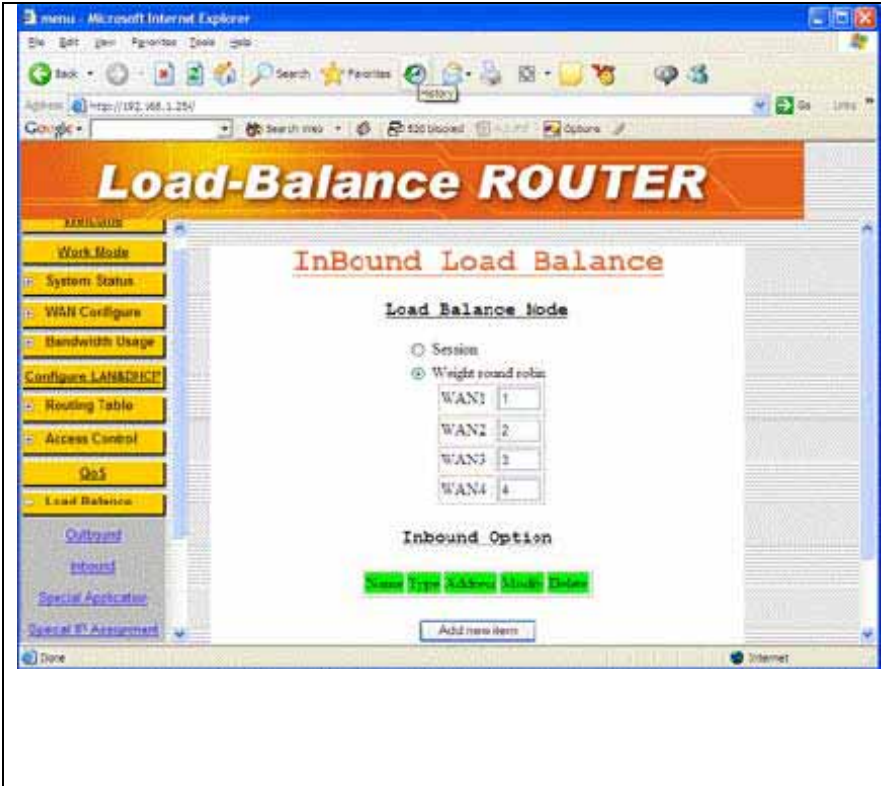
For the Load Balancing “Weighted round robin” algorithm, you should specify the data rate of each individual WAN ports.



Main Page > +Bandwidth Usage Select the WAN port that you want to enter the bandwidth.

Enter the Download & UpLoad data rate of the WAN ports into their respective fields.


Do the same for the other WAN ports.



Main Page >  
Load Balancing  
> Inbound >  
Inbound Load Balance This figure is for the 4WAN ROUTER; with the 2WAN ROUTER there will only be WAN1 and WAN2.

You are entering the ratio for each WAN port into their respective fields.

Add the appropriate entries into the Inbound Option table. The entries are similar to the entries for [www.example.com](http://www.example.com) in previous section 3.1. We will use host2 for [ftp.example.com](http://ftp.example.com), and here are the results so far.



Main Page > Load Balancing >  
Inbound >  
Inbound Load Balance This figure is the display for entering:  
[www.example.com](http://www.example.com)  
and  
[ftp.example.com](http://ftp.example.com)

Name	Type	Address	Status	Delete
host1.edunax.com	A	WAN1	<input type="radio"/>	<input type="checkbox"/>
host1.edunax.com	A	WAN2	<input type="radio"/>	<input type="checkbox"/>
www.edunax.com	C	host1.edunax.com	<input type="radio"/>	<input type="checkbox"/>
host2.edunax.com	A	WAN1	<input type="radio"/>	<input type="checkbox"/>
host2.edunax.com	A	WAN2	<input type="radio"/>	<input type="checkbox"/>
host2.edunax.com	A	WAN3	<input type="radio"/>	<input type="checkbox"/>
host2.edunax.com	A	WAN4	<input type="radio"/>	<input type="checkbox"/>
ftp.edunax.com	C	host2.edunax.com	<input type="radio"/>	<input type="checkbox"/>

The mail server requires some additional steps.





Main Page > Load Balancing > Inbound > Add New Item > Configure Inbound(Addr) for the Mail server address entry, we add: Name: mail.example.com to WAN3 rather than host3.example.com



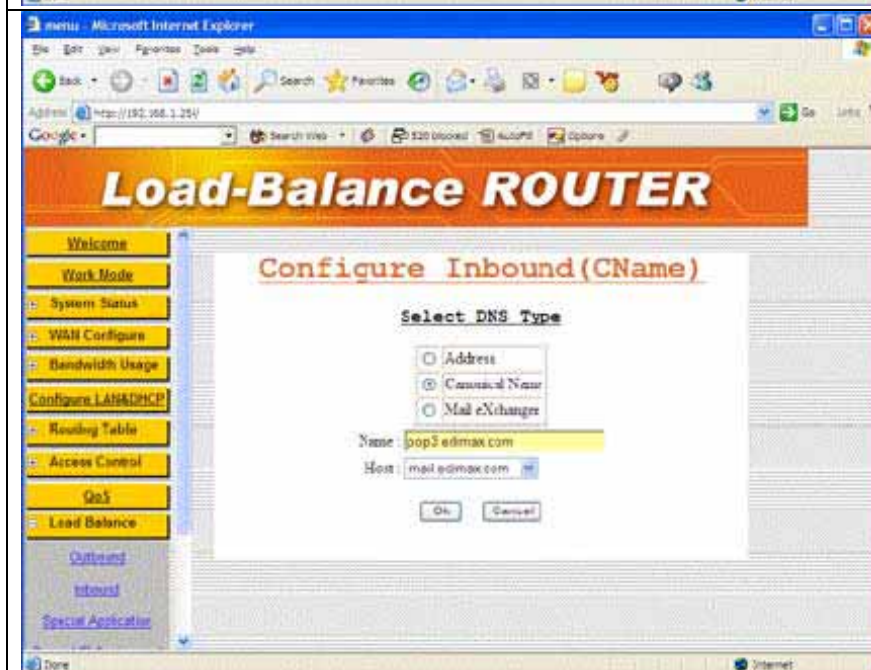
Main Page > Load Balancing > Inbound > Add New Item > Configure Inbound(Addr) similarly another address with the name: mail.example.com to WAN4 rather than host3.example.com



Main Page >  
Load Balancing >  
Inbound > Add  
New Item >  
Configure  
Inbound(CName)

Select Canonical  
Name

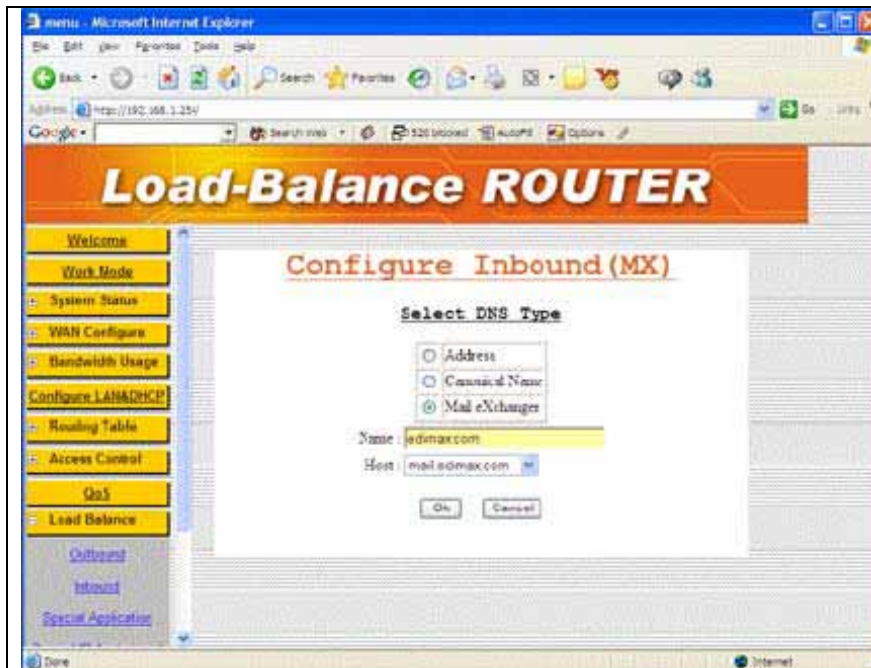
Then Enter:  
Name:  
smtp.example.com



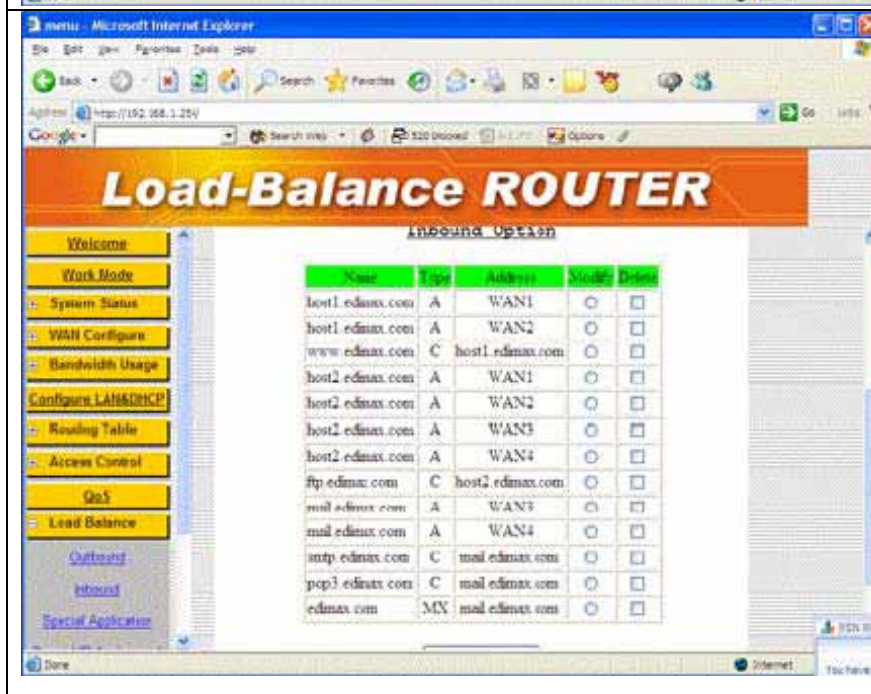
Main Page >  
Load Balancing >  
Inbound > Add  
New Item >  
Configure  
Inbound(CName)

Similarly, do it  
again for  
pop3.example.com.  
Select Canonical  
Name

Then Enter:  
Name:  
pop3.example.com



Main Page >  
Load Balancing >  
Inbound > Add  
New Item >  
Configure  
Inbound(MX)  
Since we are  
configuring a Mail  
Server: Select  
Mail eXchange  
as DNS type and  
enter: Name:  
example.com Host:  
mail.example.com



Main Page > Load  
Balancing >  
Inbound The  
Mail Server is  
configured by the  
bottom 5 entries of  
the DNS Name  
table and it is  
configured for  
WAN3 and WAN4,  
which means that it  
is for the 4 WAN  
ROUTER.  
However, it is  
similar for the 2  
WAN ROUTER.



	Global Port	Local Port	Local IP	Enable
1	21	21	192.168.1.100	<input checked="" type="checkbox"/>
2	80	80	192.168.1.77	<input checked="" type="checkbox"/>
3	25	25	192.168.1.88	<input checked="" type="checkbox"/>
4	110	110	192.168.1.88	<input checked="" type="checkbox"/>
5				<input type="checkbox"/>
6				<input type="checkbox"/>
7				<input type="checkbox"/>
8				<input type="checkbox"/>
9				<input type="checkbox"/>
10				<input type="checkbox"/>
11				<input type="checkbox"/>
12				<input type="checkbox"/>

Main Page > Advance > Virtual Server

Now that we get the IN-BOUND ROUTER DNS server configured, we still have the link the WAN IP addresses to the Internal & local LAN servers. This is done by the Virtual Server.

Enter      Global Port  
Local Port Local IP  
Select Enable

The ratio that was specified: WAN1, WAN2, WAN3, WAN4 = 1:2:3:4

[www.example.com](http://www.example.com) uses WAN1 and WAN2 with a ratio of 1:2 The IP addresses returned for the Web Server accesses, when the IN-BOUND ROUTER DNS server is queried are: WAN1, WAN2, WAN2, WAN1, WAN2, WAN2, etc [ftp.example.com](http://ftp.example.com) uses WAN1 – WAN4 with a ratio of 1:2:3:4

The IP addresses returned for the FTP Server accesses, when the IN-BOUND ROUTER DNS server is queried are: WAN1, WAN2, WAN2, WAN3, WAN3, WAN3, WAN4, WAN4, WAN4, WAN4, and the sequence will repeat. [Mail.example.com](mailto:Mail.example.com) uses WAN3 and WAN4 with a ratio of 3:4

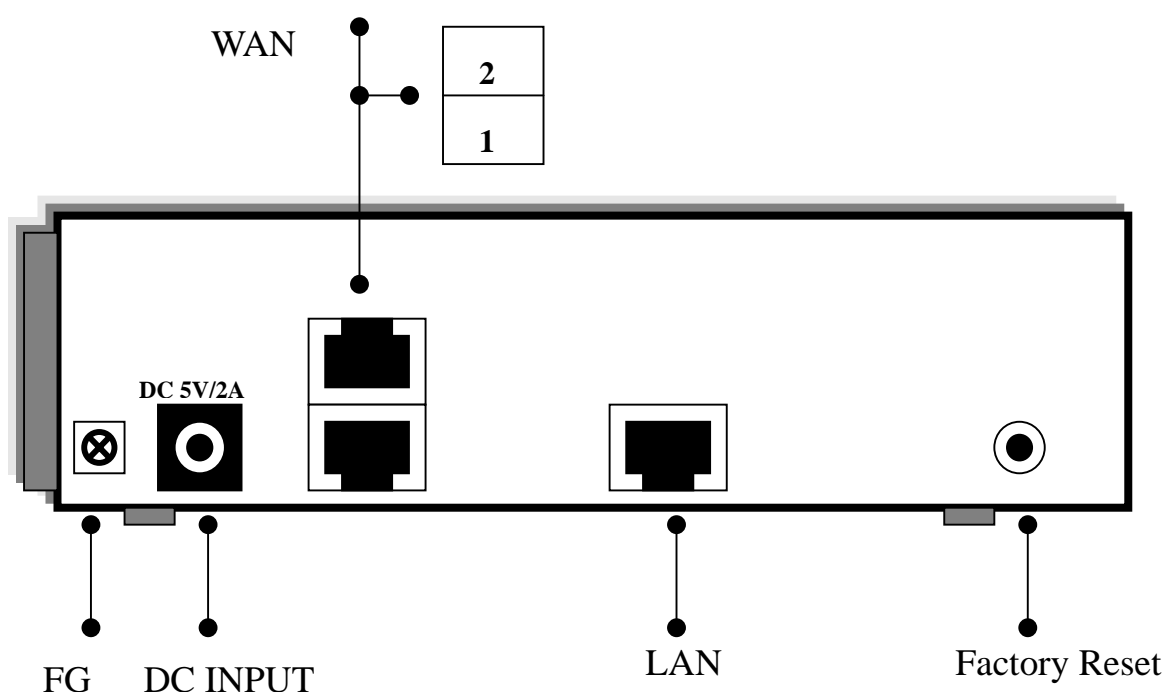
The IP addresses returned for the Mail Server accesses, when the IN-BOUND ROUTER DNS server is queried are: WAN3, WAN3, WAN3, WAN4, WAN4, WAN4, WAN4, and the sequence will repeat.

Please note: For multiple Internet servers, if you have Multiple Public Static IPs, you may use the Multiple DMZ to map public static IP address to each server. Or, if you are using Apache or Microsoft Windows Server, then you can use the Virtual Hosting and Virtual Servers function respectively.

## CHAPTER 7. HARDWARE LOAD DEFAULT

If you need to reset the settings of Broadband Router to factory default values or back to latest configuration file, please follow the description step by step to load the factory default settings or back to latest configuration file for the device. Please be careful. Do not press the **Factory Reset** button unless you want to clear the current data.

1. Plug in the power code and then press on the **Factory Reset** button **2 seconds**
2. Release the **Factory Reset** button.
3. Broadband Router will load the default settings or back to latest configuration file and do self-test
4. Complete the reset procedure.



## CHAPTER 8. ROUTER SPECIFICATION

### Load Balance Broadband Router v654

Specification	Features		Remark
<b>Hardware</b>			
WAN Port	- 4*10M/100M port - 2*10M/100M port		- Auto -sensing (RJ-45) - 802.3/802.3u, auto MDI/MDIX
LAN Port	- 1 *10 M/100 M		- Auto -sensing (RJ-45) - 802.3/802.3u, auto MDI/MDIX
CPU	- MIPS with 150MHz		
Memory	- Flash: 2M bytes - SDRAM: 16M bytes		
Indicator (5 LEDs)	4*WAN	2*WAN	
	- LAN - WAN1 - WAN2 - WAN3 - WAN4	- LAN - WAN1 - WAN2 - POWER - ALARM	
Reset Switch	- Push to load factory default value		
Power	- DC 5V/2.8A		- External Switching Power Adapter with full range 110v~220v AC input
<b>Software</b>			
Outbound Load Balance	Provide 3 working mode - Session - Weight round robin - Traffic		
Protocol	- TCP/IP, UDP - ARP, BOOTP - ICMP - Routing Protocol - DHCP server/client - FTP, TFTP - Telnet - PPPoE		
VPN pass through	- IPSEC - PPTP - L2TP		
Routing Protocol	- Static Route - RIP 1 - RIP 2		
Dynamic DNS	- Support dyndns.org		

Working mode	- Router mode	- Work as a router with .5 different LAN . 3 different LAN . Not support PPPoE
	- Gateway mode	- All functions enable
	- Basic NAT mode	- All function except . IP packet filtering . DoS defense
Security	- DMZ Host - Multi NAT/NAPT - PAP/CHAP - Virtual Server Mapping support - Internet Access Control . Packet filtering base on . Port . Address	Support - Net-meeting - Messenger - Real Audio - Cu-See-Me.
IP Binding	Specific dedicated destination IP address through dedicated WAN port -	
Firewall	- DoS (Denial of Service) protection include - Active ports scan, - TCP SYNC flood - ICMP flood - IP source route option detection - IP spoofing - Ping of death - IP fragment overlap - UDP flooding - PING oversize	
Mail Alert	- WAN up - WAN down - DoS attack - System Log full	- Support Proxy Server
System Timer	- NTP (Network Timer Protocol) - Use PC local time	
System Log	- Local event logging	
DHCP Server/Client	- DHCP Server can reserved up to 253 IP - Support up to 512 users	
SNMP v1/v2c	- MIB1, MIB2, private MIB	
Configuration Show	- Router configuration can be save into computer.	
Firmware upgrade	- HTTP web based download - TFTP server - TFTP client	

<b>Management</b>		
<b>WAN Port</b>		
MAC address clone	- Up to 4 WAN port - Up to 2 WAN port	
WAN IP Convert	- WAN port can connect to different IP domain gateway	
Dial on demand & Auto-Disconnection (PPPoE)	- Up to 4 WAN port - Up to 2 WAN port	
Link Fail-over Healthy-check	- Up to 4 WAN port - Up to 2 WAN port	- Check WAN port link - Check ADSL link - Automatically switch packet to well-connect line from broken line
Scheduling control	- Up to 4 WAN port - Up to 2 WAN port	- Set up each WAN port Connect/ Disconnect automatically
IP Binding	- . specific destination IP address through dedicated WAN port	
Bandwidth Control (QoS)	- Dynamic allocate bandwidth for each user - Limit individual user bandwidth usage	- Avoid link congestion
Link data monitor	- Show each WAN port bandwidth usage And traffic status	
<b>Management</b>		
<b>LAN Port</b>		
DMZ (De-Militarized Zone)	- Support Multiple DMZ	
Multi-NAT	- User definable - Up to 10 different LAN segment IP can be define at LAN port	
Remote Configure	- con configure ROUTER through INTERNET	
Virtual Server	- Bi-direction virtual server - Local virtual server pass through	-LAN user can use WAN IP to reach virtual server
Con-current user	- Up to 200 users - Tested by CHARIOT program	
Temperature	- 0 ~ 40 C (operation) - -10 ~ 60 C (storage)	
Dimension	- small :180mm(W)*160mm(D)*50mm(H) - big : 270mm(W)*180mm(D)*50mm(H)	
Weight	- small : Under 600g - big : Under 800g	
Humidity	- 10 ~ 95% RH	
ESD	- +/- 4 KV	
Certification	- CE /FCC	
Ordering Information	- (2 WAN, 1 LAN Router) - (4 WAN, 1 LAN Router)	

## 9.1 TCP/IP Protocol Port Number List

### Protocol Port No. List

Protocol	Service	Port no.	Protocol	Service	Port no.
TCP	FTP	21	TCP	LADP	389
TCP	SSH	22	TCP	HTTPS	443
TCP	TELNET	23	UDP	IKE	500
TCP	SMTP	25	TCP	RLOGIN	513
UDP	DNS	53	UDP	SYSLOG	514
UDP	TFTP	69	UDP	TALK	517,518
TCP	GOTHER	70	UDP	RIP	520
TCP	FINGER	79	TCP	AFPOWERTCP	548
TCP	HTTP	80	TCP	Net-Meeting	1503,1702
TCP	POP3	110	TCP	L2TP	1701
UDP	NFS	111	TCP	PPTP	1723
TCP	NNTP	119	TCP	AOL	5190~5194
UDP	NTP	123	UDP	PC Anywhere	5631~5632
TCP	IMAP	143	TCP	XWINDOW	6000-6063
UDP	SNMP	161	TCP	IRC	6660~6669
TCP	BGP	179	TCP	Real-Media	7070
TCP	WAIS	210	TCP		6000-6063